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The West Virginia Medical Journal

Published by
The West Virginia
State Medical Association

New Year's Greetings

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Vol. XXXII JANUARY, 1936 No. 1

BENIGN BREAST LESIONS, WITH SPECIAL CONSIDERATION OF BORDER-LINE TUMORS. CANCER OF THE BREAST AND THE NEWER CONCEPTION OF PREOPERATIVE IRRADIATION*

By L. Clarence Cohn, M. D.
Baltimore, Maryland

In selecting a title for an address at the formal opening of the Tumor Clinic, I chose the subject of the female breast, because of the frequent occurrence of tumors and tumor-like lesions in this location. Any discussion of the diagnosis and treatment of breast lesions is of necessity a discussion of breast pathology, which is the foundation upon which the surgical treatment of breast lesions has been established; and now any consideration of the treatment of cancer of the breast must include a consideration of irradiation, in relation to both cure and palliation. Later on, I will discuss surgery and irradiation in relation to the treatment of breast cancer, and try to give a summary of our experience in the past and more recently. Up until three and a half years ago this experience in the treatment of cancer of the breast was entirely with surgery, or with surgery and postoperative irradiation. In the last three and a half years we are beginning to have quite an experience with preoperative irradiation, and this experience seems to indicate that the best results in the treatment of cancer of the breast will be obtained when there is in each case an individual treatment established by the combined opinion of a radiotherapeutist, a surgeon, and a pathologist. This combination may require three different individuals; or one individual may educate himself along all three lines. It is a great advantage in the treatment of cancer to have these three specialists closely associated, so each can, as far as possible, make himself expert in the others' fields, and so accumulate this combined experience.

There is still a great difference of opinion among surgeons with respect to the various operations for the treatment of the various lesions of the breast. Particularly is this so in respect to chronic cystic mastitis. I will go into this in greater detail later. There is also a great difference of opinion among surgeons

*Read at the opening of the Golden Tumor Clinic, Davis Memorial Hospital, Elkins, West Virginia, Wednesday, July 10, 1935.

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in regard to the place of irradiation in the treatment of cancer of the breast; still a third point of debate among some radiotherapeutists and surgeons is in regard to the extent of the operation after preliminary irradiation.

FIG. 1: Gross section through specimen of case described in text. Arrow indicates area suspicious of cancer. For microscopic appearance see Fig. 2.

Chronic cystic mastitis, clinically and in the frozen section at biopsy, has caused perhaps the greatest dilemma, and a great many breasts have been needlessly sacrificed for this disease, which has a tendency to get well spontaneously, and so frequently disappears after the menopause. Many pathologists are diagnosing chronic cystic mastitis as cancer, and, in fact, some expert investigators feel that chronic cystic mastitis is a precancerous lesion, and advise removal of one or both breasts therefor — a view which we oppose. This disease was first described by Schimmelbusch and Reclus before 1900. They felt that it was a precancerous lesion in about 50 per cent of the cases, and this agrees with some of the present opinions. Bloodgood in 1908 felt that chronic cystic mastitis, which he called senile parenchymatous hypertrophy, was precancerous in only 10 per cent of the cases, and in 1921 he retracted this statement with the opinion that chronic cystic mastitis is a benign lesion. These studies in chronic cystic mastitis have been one of the triumphs of surgical pathology of the breast; but, as I mentioned above, this view has not been entirely accepted, even yet. Some of us have felt for years that chronic cystic mastitis is a change in the breast secondary to conditions outside the breast, and in the last year Geschickter and Lewis have come to the conclusion that a hormone is responsible. Surgeons and others who have trained themselves in the examination of the breast are now able to recognize chronic cystic mastitis in the majority of cases from transillumination and palpation, making any type of treat-

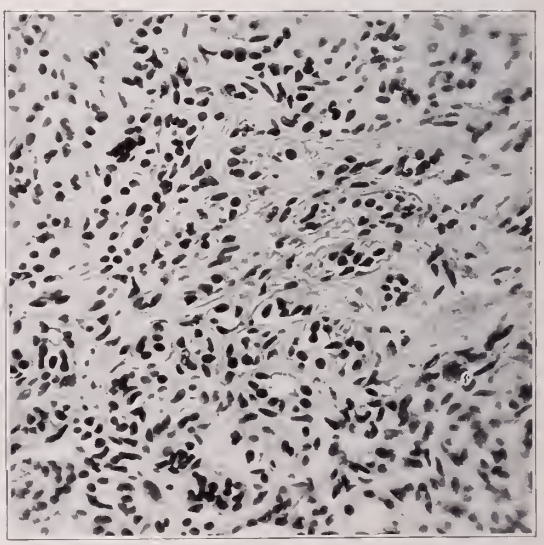

FIG. 2: High power photomicrograph of area in Fig. 1 indicated by arrow. Pathologists disagreed on diagnosis.

ment, even biopsy, unnecessary. Even today, however, a patient with chronic cystic mastitis runs a risk of losing one or both breasts, unless both the surgeon and pathologist responsible for the diagnosis in the operating room have taken great pains to make themselves

expert in the clinical and histological characteristics of this disease.

In February, 1930, now more than five years ago, before we took up preoperative irradiation, I explored a clinically benign tumor of the right breast in a woman forty-six years of age, who had had the tumor only four weeks. In spite of the fact that for more than ten years prior to this I had devoted a great deal of time to the study of chronic cystic mastitis, I made a diagnosis of cancer in the wall of a blue domed cyst, and did the complete operation for cancer. (Figs. 1 & 2). The glands were not involved, and the patient is now well after more than five years. These sections have been shown to a number of pathologists, about 50 per cent call it cancer

FIG. 3: High power photomicrograph showing a group of cancer cells obtained at aspiration biopsy from case of clinically doubtful tumor of breast. This patient was given preoperative irradiation and will return in a few weeks for the complete operation.

and 50 per cent, benign. I now feel that this is chronic cystic mastitis, and that the breast could have been saved without risk of cancer. It is interesting that six months later this patient returned with a tumor in the opposite breast of one week's duration, which proved to be a blue domed cyst.

There is very little difficulty in recognizing the clinically malignant tumor of the breast. In some instances we have used aspiration biopsy. (Fig. 3). In the last three and a half years we have followed the rule of preoperative irradiation, but as yet we are not

FIG. 4: Gross appearance of non-encapsulated tumor of breast in which the tumor only was excised. For detail see text.

ready to give actual figures on results. Postoperative irradiation was given up as a routine procedure more than seven years ago, and the results up to date seem to indicate that if irradiation is to take its place in the treatment of cancer of the breast, this irradiation should be before, and not after operation. Every discussion of cancer of the breast among surgeons is disclosing the great difference of opinion in regard to irradiation, but our experience in the last three and a half years seems to allow us to make the statement that there is no danger in delaying the operation for one or more courses of preoperative irradiation, provided we wait the proper time after the irradiation is over to operate. Up to the present time we have advised operation in all oper-

able cases, except in a few women over seventy, in which all gross evidence of the disease had disappeared. There is one exception to this—a tumor of two months' duration which clinically resembled acute carcinoma in a young woman forty-one years of age. The

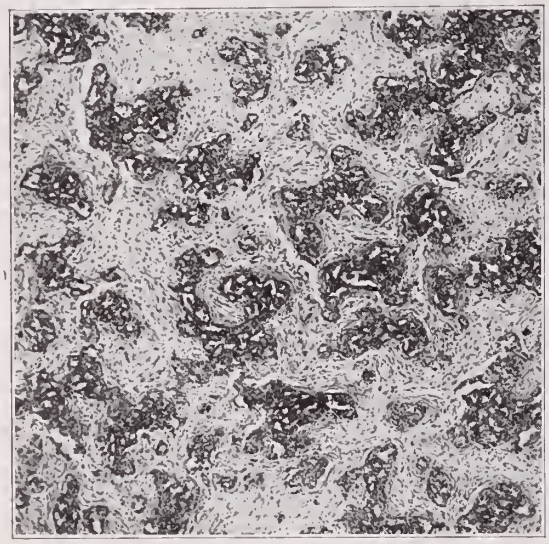

FIG. 5: Photomicrograph of tumor shown in Fig. 4. Some pathologists made the diagnosis of cancer, others lactating adenoma.

irradiation was with x-ray and interstitial radium, from December 19, 1934, to March 9, 1935, and all evidence of the disease disappeared. She is reported well June 24, 1935. We advised against operation in this case because we feel her chief danger is from metastasis, rather than from recurrence. She is being carefully observed, and we may yet decide to advise operation, should there be any definite indication.

In many of the cases operated upon there has been microscopic evidence of disease, both in the breast and in the axillary glands, but Doctor and Mrs. Gey have been unable to grow the cells in tissue culture in some of them. In a few instances we have found no residual cancer, but as yet we have been unwilling to restrict the operation for cancer of the breast.

The best illustration of a clinically benign tumor in a young woman twenty-nine years of age, five months pregnant, which I explored January 5, 1932, now three and a half years ago, and about which there was a great difference of opinion as to diagnosis, both in the immediate frozen section and later in the paraffin section, demonstrates the procedure which should be followed when there is a difference of opinion in regard to the malignancy of the lesion. (Figs. 4, 5, 6). Irradiation to the axilla was started at once, and later, in about ten days, when the wound had healed, the irradiation was carried over the breast. She is well today, although with her second pregnancy she developed three nodules—one in the scar, which was in the periphery of the upper hemisphere of the right breast, and two above the scar. On examination, when the baby was two months of age, the nodules had entirely disappeared, but with the return of the menstrual period a month later, there was a recurrence of the nodules. Two of them gradually increased in size to that of a ten-cent piece. This was in March, four months ago, since which time there has been irradiation by Dr. Burnham, and the nodules have now entirely disap-

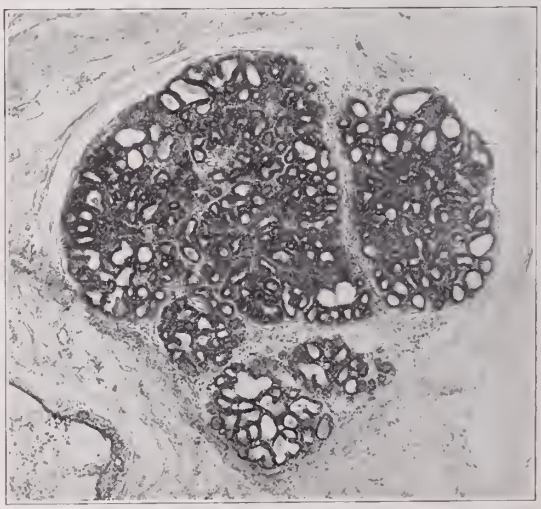

FIG. 6: Breast tissue beyond tumor in case shown in Figs. 4 and 5, showing pregnancy hypertrophy of the lobule.

peared. This case also is the best illustration of the changes which take place in the adenoma of the breast during pregnancy and lactation, and the great difficulty in distinguishing a lactating adenoma from carcinoma. In similar cases this delay for thorough ir-

radiation gives an opportunity for submitting the sections to other pathologists, and when the complete operation is decided upon the patient has the advantage of this preoperative irradiation.*

These borderline tumors require special study on the part of pathologists, and these

FIG. 7: Photograph of patient after biopsy for ulcer of nipple. For microscopic appearance of ulcer see Fig. 8.

are the cases about which the pathologists disagree. As a rule they are some type of chronic cystic mastitis, or have to do with changes in the breast occurring after lactation, or belong to the group of tumors first described by Bloodgood in 1908 as comedo adenocarcinoma, and now classified as pure comedo adenoma.

One of the first striking results of preoperative irradiation in inoperable carcinoma of the breast was a patient who first came to our clinic in June, 1932, and is now well, over three years. Because of the patient's condition we were unable to do the axillary dissection. In another case of beginning carcinoma en cuirasse there has been irradiation only, and the patient is now well, three and a half years. In a third case, with a bleeding, ulcerating fungus tumor of the breast, with enlarged axillary and supraclavicular glands, there has been biopsy and irradiation only, and the patient is living, now two and a half years. The irradiation was given first at the New York Infirmary for Women and Children, and later at the Memorial Hospital. Dr. Adair reports May 15, 1935, that everything has disappeared except a suspicious supraclavicular node which has been present nearly a year, and has not progressed during this time.

On June 8, 1934, now more than a year ago, there came under our care a woman forty-eight years of age, the wife of a naval officer. She had noticed retraction of the nipple for a month, and on transillumination there was a dark area above the left nipple, just beneath the areola, about two by one cm. Just at the site of this dark area there was a small palpable tumor. There was a palpable gland in the axilla. Dr. Burnham gave her two courses of preoperative irradiation before we did the complete operation on September 13, 1934, and she is now well, more than a year. Under irradiation the tumor and transilluminatable area in the breast decreased in size, and the axillary gland disappeared. The

FIG. 8: Low power photomicrograph showing Paget's carcinoma in ulcer involving nipple from case described in text.

sections from the small palpable tumor show cancer, but there is no evidence of any metastasis to the axillary glands. Dr. Gey reported growth of tumor in tissue culture from the tissue removed from the primary tumor in the breast. Here is pretty good evidence

*There are now (July 24, 1935) signs suggesting metastasis to the liver.

that the involvement which we palpated in the axilla prior to irradiation was destroyed by irradiation; and the cancer in the breast, although still present in the sections, has not the appearance of a non-irradiated cancer. It is quite possible in this case that we have increased her chances for a cure, by preoperative irradiation, from 25 to 70 per cent.

On October 1, 1934, a very intelligent woman of fifty-one years of age, called our attention to a tumor the size of a twenty-five cent piece in the nipple zone of the left breast, of one week's duration, which gave the impression of slight fluctuation. There was slight retraction and slight fixation of the nipple, but no palpable glands in the axilla. The center of this breast did not transilluminate quite as clear as the center of the opposite breast, but there was no distinct dark

FIG. 9: Nipple, areola, and breast beneath showing extent of excision for small area of keratosis on nipple.

shadow beneath the nipple. Under preoperative irradiation there was no decrease in the size of the palpable tumor. The aspiration biopsy on the operating table excluded a cyst, and showed cancer cells, confirmed by incisional biopsy. The sections from the tumor beneath the nipple showed cancer, and the base axillary gland, metastasis, although Dr. Gey was unable to cultivate the cells. She was examined in the office a few weeks ago, and found to be perfectly well.

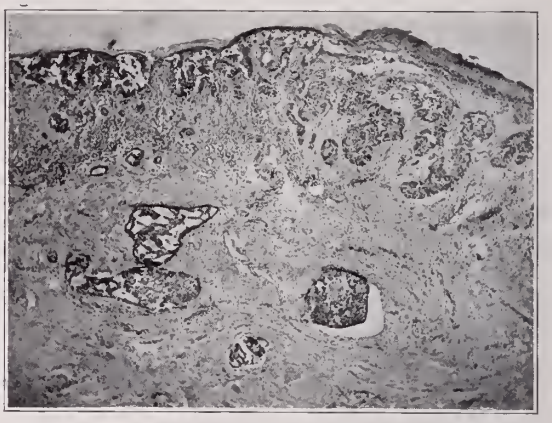

FIG. 10: Low power photomicrograph through nipple of case shown in Fig. 9, showing fully developed Paget's carcinoma.

I would like to call attention to two cases of Paget's disease in which our method of attack has been along similar lines. In the first instance a young woman thirty-one years

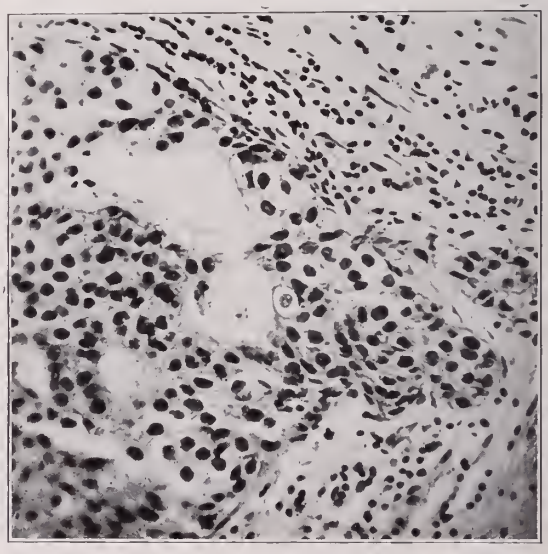

FIG. 11: High power photomicrograph of breast neath nipple in same case shown in Figs. 9 and 10. This section shows the epidermoid type of carcinoma characteristic of Paget's disease.

of age came to see us January 15, 1934, when the left nipple had been replaced by an ulcer. The biopsy consisted in excision of the ulcer, including the areola and breast tissue beneath, and showed Paget's carcinoma. (Fig. 7 and

Fig. 8). There were two courses of irradiation from January to November, 1934, and on November 23, 1934, I excised a little nodule some distance from the scar and the sections showed spinal cell epidermoid carcinoma. The complete operation followed, on November 27, 1934, and although we found cancer in the breast, there was no metastasis

FIG. 12: For description see text.

to the axillary glands, and there was no growth in tissue culture. This case seems to demonstrate that there was no danger in delaying the complete operation from January until November in order to get in this tremendous amount of irradiation.

The second case of Paget's disease is still under treatment. When she came under our observation on December 12, 1934, more than six months ago, there was simply an area of keratosis about 1 mm. in diameter surrounded by an area of shiny epidermis which was a little red, and lacked the distinct wrinkling of the opposite nipple. Clinical evidence seemed to favor a benign keratosis of the nipple, but the same day we saw her we excised the nipple, areola, and breast beneath under novocaine, and in the frozen section found fully developed Paget's cancer, both in the nipple and breast beneath. (Figs. 9, 10, 11). Irradiation was started to the axilla, and after the wound had healed, which was in about ten days, irradiation was given to the breast. After the irradiation was completed she spent the winter in Florida, and did not return until May 15, four months later, when there was nothing to be palpated or transilluminated in the breast, but there was a gland the size of a ten-cent piece in the base of the axilla which had not been present four months previously, and which had appeared in spite of the irradiation. She was given a second course of preoperative irradiation, which was completed on June 15, at which time I was unable to palpate the gland I had palpated in the axilla prior to the second course of irradiation. We plan to do the complete operation here in a few days.

Before concluding, I would like to say a word about comedo adenoma, and show three cases, the first of which I will present in great

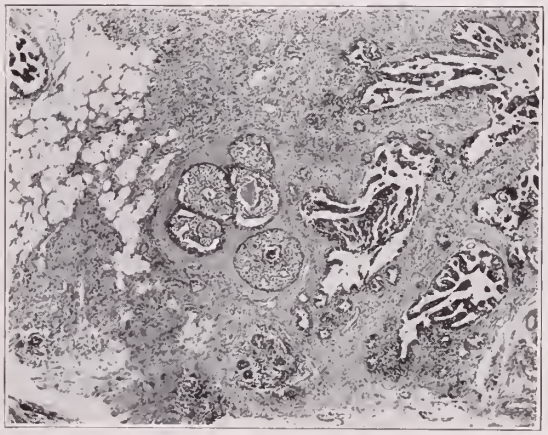

FIG. 13: Low power photomicrograph from biopsy from case shown in Fig. 12. This section shows chronic cystic mastitis and comedo adenoma, no carcinoma.

detail, because it is unique. This patient consulted us January 7, 1931, four and a half years ago, when she was thirty-eight years of age. She was married, and had two children, ages twenty and five. The symptom of onset was a watery discharge from the right nipple nine months previously. Six months previously there was induration of the breast, which disappeared, and reappeared only the day be-

fore she entered the clinic. There was a blush of the skin which appeared at the same time. At the examination we found edema of the areola, and retraction and fixation of the nipple, and a palpable mass which occupied practically the entire breast, but did not extend quite to the periphery. (Fig. 12). In view of this unusual history of intermittent erythema and intermittent induration, we decided to explore, rather than deliberately to perform the complete operation, (we were not employing preoperative irradiation at this time). At the exploratory incision, after making a number of frozen sections, we found only chronic cystic mastitis and comedo adenoma, but no evidence of carcinoma. (Fig. 13). We did not remove the entire indurated area of the breast, but left indurated breast tissue behind. Prior to operation this entire breast

FIG. 14: Photograph of patient shown in Fig. 12, December 28, 1934, four years later. The minute skin nodule noted in the text does not show in the photograph.

transilluminated dark, but three months after operation the induration in the breast had entirely disappeared, and the breast tissue that remained transilluminated clear. She was free from any evidence of recurrence until in the routine follow-up examination on December 28, 1934, almost four years later, I found a little shot-like nodule the size of a pea above the scar, which clinically looked like a mosquito bite, but the sections show a low grade adenocarcinoma. (Figs. 14, 15). Following a course of irradiation which lasted from January 2 to January 12, 1935, there has been no further trouble, and she is well, now four and a half years, and the only irrad-

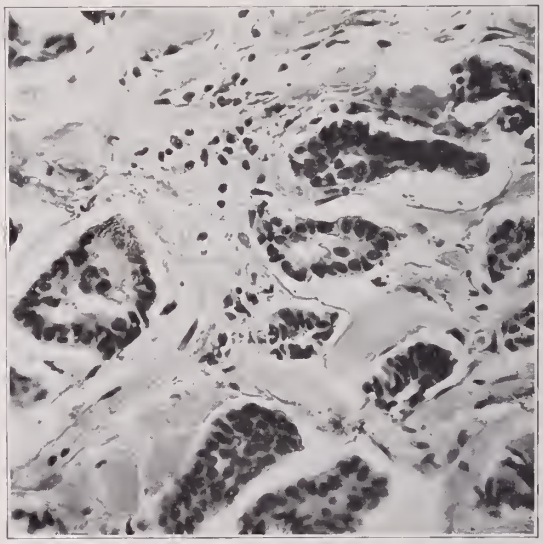

FIG. 15: High power photomicrograph from skin nodule referred to in text showing low grade adenocarcinoma.

iation was six months ago. I would not advise my colleagues to follow this procedure, in spite of the fact that this patient is well; but when a clinically benign tumor can be completely excised without mutilation of the breast, and the sections show pure comedo adenoma, as in a case of Dr. F. K. Nichols, of Baltimore, whom I had an opportunity to examine before operation and interpret the section at operation, local excision of the tumor is sufficient. On the other hand, when the tumor involves the entire breast, as in the previous case, I would advise preoperative irradiation, and when the biopsy shows comedo adenoma, even in the pure form, it seems safer for the present to perform the complete operation for cancer.

I had an opportunity a year ago to observe just such a case. She was referred to us by Dr. James F. Kelly, of Omaha, after he had given her the preoperative irradiation. As

the biopsy showed comedo adenoma, we proceeded at once with the complete operation. The glands showed no metastasis, and the tissue culture was questionable. I am inclined to think that her chances for a cure are almost 100 per cent.

THE PRODUCTION OF PATHOLOGICAL CHANGES IN THE NERVOUS SYSTEM BY DIABETES MELLITUS*

By WM. M. SHEPPE, M. D.
Wheeling, W. Va.

INTRODUCTION: Complications which may arise in the course of uncontrolled diabetes are numerous and disabling. Gangrene, acidosis, coma, peripheral neuritis and retinitis are well recognized hazards to the health and life of the diabetic. To this frequently encountered group must be added a much rarer type of complication which has been denominated as diabetic neuropathy. This involvement of the central nervous system secondary to diabetes seems to have escaped general notice. Accurate observations have been recorded in European literature since as early as 1884, including descriptions of many bizarre neurological manifestations occurring as the result of uncontrolled diabetes mellitus. It is only very recently that attention in America has been directed to this type of involvement. Root and Rogers[4], Jordan, Randall and Bloor[1], and Woltman and Wilder[7], have recently described certain changes in the nervous system believed to be due directly or indirectly to diabetes. These and other authors have emphasized the necessity of according diabetes a more prominent rôle in the differential diagnosis of lesions of the central nervous system.

This report is based upon the clinical study of five cases and the pathological report of one case, in all of which diabetes produced profound and destructive changes in the nervous system.

Clinical Manifestations of Diabetic Neuropathy: The destructive effect of uncontrolled diabetes may make itself felt in any portion of the nervous system with the resulting production of a variety of clinical signs and symptoms. We will consider first isolated manifestations of this type of pathology and then discuss at more length several well defined syndromes. It is my impression that neurologists and internists do not ordinarily consider diabetes when making a differential diagnosis of disease of the central nervous system. It must be remembered that diabetes occurring in individuals above the age of thirty is often asymptomatic and may go unsuspected. Hyperglycemia may be marked without the occurrence of glycosuria. For this reason, it is highly desirable that diabetes as a disease entity capable of producing neurological lesions should be considered at all times just as we keep in mind, for purposes of elimination, syphilis, encephalitis, pernicious anemia and other systemic diseases with secondary effects on the nervous system.

(a) *Ocular Paralysis:* Involvement of the eye muscle nerves is not an excessively rare complication of the disease. They occur most frequently in elderly individuals and are often accompanied by retinitis. Mauriac[10] has recently described a number of cases presenting ocular palsies. The onset is usually sudden, developing in full magnitude without pain. The order of frequency for the development of these paralyses is as follows:

1. The abducens;
2. The oculomotor;
3. The trochlear.

Combinations of paralyses of external and

*Read before the West Virginia State Medical Association at Wheeling on May 6, 1935.

internal ocular muscles are rare. Recovery seems to be the rule within a short period in these cases but recurrence has been reported. It is not unusual to observe fixation of the pupils as part of a general syndrome to be described later but this has not been observed by me in combination with extrinsic ocular paralysis.

(b) The facial nerves may also become involved with the development of non-painful temporary paralysis.

(c) Involvement of the higher centers of the brain is not particularly outstanding. A change of personality is often observed with cyclic periods of depression; obsessions may develop, such as extremely penurious tendencies or delusions of persecution. These are usually mild and occur in elderly individuals and are not to be distinguished from similar disturbances ordinarily classified as senile dementia and believed to depend upon vascular changes in the brain. Anarthria has been described but is quite rare. Astereognosis and diadokokinesia are infrequently observed.

(d) Perhaps the most frequent aberration from the normal is the absence of knee jerks and ankle jerks in diabetes. This abnormality has been a matter of observation for many years. As early as 1884, Bouchard[11] noted the absence of patellar reflexes in more than one-fourth of his patients. Similar observations have been recorded by many others. Sevringhaus[12] found reduced or absent reflexes in 57 per cent of the patients, especially examined for these changes. It is evident that the absence of patellar and Achilles reflexes should at least arouse the suspicion of the presence of a latent asymptomatic diabetes.

(e) Pain and numbness when not due to demonstrable vascular disease of the extremities must be considered evidence of abnormality of the nervous system. These two symptoms frequently occur together. The pain is usually felt in the calves of the legs and may be extremely severe. Instead of numbness, various types of paresthesias may be present. This type of pain must not be confused with the pain existing in the extremities or abdomen which is not infrequently met with during a period of severe acidosis.

(f) A localized type of involvement which is not infrequently found is the paralysis involving the peroneal nerves and resulting in paralysis of the anterior tibial groups of muscles. This produces the well-known clinical manifestation of foot drop. This is not accompanied by pain and usually occurs suddenly and without warning. The patients notice a sudden weakness of the foot and ankle and find that they are inclined to stumble when walking on the level and particularly when going up steps. Dorsiflexion of the foot becomes impossible. The level of this lesion is believed to be near the head of the fibula. It bears a close clinical resemblance to the so-called "boot paralysis."

It is obvious from the foregoing observations that diabetes may affect almost any portion of the nervous system, often producing single manifestations of either motor or sensory character.

Perhaps the most striking effect which diabetes mellitus has upon the nervous system is in the production of the syndrome which has been variously called polyneuritis diabetica, pseudotabes diabetica, diabetic myelitis and diabetic neuritis with paralysis. This syndrome includes motor paralysis of the lower extremities and atony of the bladder.

Our observations cover five cases, all with motor paralysis of the extremities and two with complete bladder paralysis.

CASE REPORTS

Case 1: Mr. R. B., aged forty-five, was referred to Dr. R. D. Gill on December 28, 1928, complaining of "inability to empty the bladder." He had also noticed a midline abdominal tumor which always disappeared following catheterization by his doctor. An increasing frequency and nocturia kept him confined to his own premises. The urinary stream was described as very small with marked dribbling at the end of urination. No complete retention was reported and no hematuria or passage of calculi had been observed. Symptoms referable to either kidney were entirely absent. He vigorously denied having had venereal disease of any type.

In addition to the above urological complaints, he reported considerable difficulty in walking and complained bitterly of severe shooting pains down the legs, particularly over the lateral surfaces. He was quite unsteady and when walking he had to watch the ground carefully to keep from falling. The patient felt that he had always been well up to 1920. At that time he had an appendectomy for acute appendicitis and during his stay in the hospital, the surgeon discovered that he had diabetes. He was brought under proper diabetic control but for the past year had paid no attention to his diet. During the intervening period, he had at various times, a marked polydipsia and polyuria. The appetite had been insatiable. His best weight was 130 pounds and his last weight was one hundred and twenty-seven pounds. Excerpts from the physical examination by Dr. A. L. Osterman follow:

"The patient, a middle-aged man, had a very slight, marsamic frame and appeared acutely ill.

"The pupils reacted sluggishly to both light and accommodation. They were equal in size and regular in outline.

"The extremities, both upper and lower, presented extreme atrophy of the muscles. The tissues were very soft. Muscular power was almost entirely lacking in the lower extremities. The quadriceps and peroneal groups seemed to be chiefly involved. The patient was unable to stand without support and refused to attempt to walk as he had previously fallen and injured himself when making such an attempt. The leg pains were increased by standing.

"The deep tendon reflexes in the lower extremities were absent. The biceps, triceps and radial tendon reflexes were present. No abnormal reflexes were noted.

"Sensation for touch and for pain were apparently well preserved. Sensation to temperature, especially to cold, was impaired. A test tube of cold water placed upon the lower extremities at various points was at times felt to be hot or warm and again as cold. Vibratory sensation seemed to be impaired, especially about the region of the right ankle but was fairly intact at other places."

Urological examination by Dr. R. D. Gill revealed the following:

"There is in the lower abdomen and extending up to approximately half an inch above the umbilicus, an easily percussable and palpable tumor, which is taken to be a markedly over-distended bladder. No tenderness in either kidney region. There is a tympanitic note heard over practically the whole tumor mass and it appears that there is a considerably distended bowel above the bladder. Outside of these findings, the abdomen is negative. There is considerable edema of the lower left extremity with marked pitting on pressure. The prostate is not markedly enlarged. It is soft and cystic. Median furrow is present but shallow. There are no areas of induration. The gland is very slightly elevated, if at all and it is not adherent. There are no areas suggestive of malignancy. Seminal vesicles are normal. Membranous urethra is negative."

The laboratory work was entirely negative, except for sugar in the urine and a blood sugar of two hundred and twenty milligrams per hundred cubic centimeters of blood.

As the patient was considered extremely ill (temperature 103°) he was admitted to the hospital. Gradual decompression of the bladder was instituted. After all residual urine had been eliminated, the patient was cystoscoped by Dr. Gill. Obstruction from urethral stricture or prostatic enlargement was entirely eliminated. The sphincter was slightly relaxed. No stones, diverticula, or tumors were noted. The mucous membrane was injected and mucopurulent debris gave evidence of a considerable degree of cystitis. The bladder was trabeculated, the trabeculations ranging from the medium to fine variety.

As all types of obstruction were absolutely eliminated, Dr. Gill felt that there must be some interference with the neurogenic function of the bladder and made a diagnosis of "cord bladder."

The patient was brought under diabetic control with great difficulty. The temperature, which was, no doubt, due to urological infection, gradually declined.

At this point, examination of the spinal fluid, with careful manometric readings, eliminated the possibility of syphilis of the nervous system or the possibility of a cord tumor above the cauda equina.

Despite prolonged drainage by indwelling catheter, the patient did not improve in his ability to empty his bladder. He was discharged from the hospital with such a catheter in place. The diet was C. 75, P. 65, F. 130; calories 1730. (He would have a diet much higher in carbohydrate at the present time.)

On this diet, twenty-five units of insulin were required per day to keep the blood sugar below one hundred and fifty.

About three months after his return home, the

patient expired, presumably from toxemia resulting from an ascending urinary infection. Unfortunately, no autopsy was obtainable.

Case 2: Mr. V. Z., male, aged forty-nine, was first examined at the Wheeling Clinic, April 30, 1934. He stated that he had had diabetes for ten years. Due to economic conditions, he had never been able to have satisfactory control of the diet and in fact, was unable to keep himself supplied with insulin. At this time he complained of easy exhaustion, urinary dribbling, nocturia, day frequency and a progressive atrophy of the muscles of the legs. Weight, 151 pounds. The blood sugar at this time was three hundred and fifty. The urine contained sugar but no acetone. Despite continued efforts by the patient and his physicians, straitened circumstances prevented accurate control of the diabetic situation. The patient continued to go down hill. The dysuria became progressively worse and the patient was admitted to the Ohio Valley General Hospital. The physical examination was as follows:

The patient, a poorly nourished and poorly developed adult male, looked rather ill. The muscles of the legs were atrophic. The pupils did not react to light but did to accommodation. All teeth had been removed. The blood pressure was 160/70. The peripheral vessels were moderately sclerosed. A smooth fluctuant tumor mass extended from the symphysis half way up to the umbilicus. This mass disappeared following catheterization. The blood sugar was three hundred and sixty-five mgms. per 100 c.c. of blood. Blood urea nitrogen was 13.2, blood Wassermann and Kahn were negative. Lumbar puncture was performed with the following findings in the spinal fluid:

Cell count, 6; globulin, two plus; colloidal gold curve, normal; spinal fluid Wassermann, negative in all dilutions; total protein, 60; reducing substance, 107.

All specimens of urine which were examined showed a very heavy trace of albumen with numerous red blood cells and pus cells.

Cystoscopic examination revealed no obstruction of any type in the bladder neck. The bladder was grossly infected. A cystogram demonstrated an enormously dilated bladder with smooth outline. The pelvic vessels showed a marked arteriosclerosis and calcification of the seminal vesicles. Neurological examination by Dr. A. L. Osterman was as follows:

"The patient's gait is on a broad base. It is impossible for him to walk on his toes or heels. The Romberg is markedly positive. Cranial nerves normal. Pupils react very slightly to light, the left pupil being irregular.

"All muscles are distinctly weak. This is much more marked in the muscles of the legs.

"*Reflexes:* No abnormal reflexes noted. Abdominal and cremasteric reflexes present. The tendon reflexes in the upper and lower extremities are entirely absent except for very sluggish patellar reactions. Coördination is inaccurate.

"*Sensation:* (a) Touch is markedly impaired from the knees downward in both legs. Impairment increased distal to the malleoli;

"(b) Painful stimuli impaired from the level of the first lumbar segment;

"(c) Vibratory sensitivity is almost absent over both legs."

The patient gradually lost strength and, despite a careful diabetic control, his temperature continued to rise and he expired. The autopsy was performed by Dr. H. G. Little and the findings of importance were as follows:

"The spleen was moderately enlarged. The cut surface was light reddish brown in color. The capsule was smooth and tense; on section the pulp was rather soft and more or less hemorrhagic in appearance.

"The left kidney weighed 270 grams. The kidney was larger than normal. A large area of organized fibrous exudate was noted on the surface after removal of the capsule. There were scattered hemorrhagic areas through the cortex. On section, gray streaks were noted which contained pus and which extended from the pelvis to the cortex. The pelvis was moderately dilated and was filled with pus The ureter was normal in size.

"The right kidney was reduced to a thin layer of kidney tissue by the pressure of a large collection of pus which distended the pelvis. The ureter was moderately dilated. The urinary bladder was filled with cloudy urine. The bladder wall was rough and granular in appearance, with small hemorrhagic areas and small abscesses studded here and there in the mucosa.

"*Adrenals:* Gross appearance normal.

"*Pancreas:* The gland was normal in size and shape. It was softer than normal in consistency.

"The vessels of the meninges and spinal cord were markedly engorged. No other gross evidence of disease was noted in the cord which was removed for misroscopic study.

"*Microscopic Examination:* Study of numerous sections of the spinal cord from the thoracic and lumbar portions shows some pathological changes. The most definite lesion showed in one posterior root. Here there was vacuolization, rarefaction and loss of substance. Occasionally in other sections there were irregular areas of rarefaction, one particularly being in the anterior column. In one section occasional nerve cells of the anterior horns showed atrophy, loss of nuclei and loss of Nissl granules. One nerve cell had a large clear space and the cytoplasm had formed a crescent at the edge. Another cell showed an increase in lipoid material and the nucleus was eccentric. None of these changes had an associated inflammatory reaction.

"There were a moderate number of round hyaline-like bodies scattered through the sections.

"The meningeal vessels were patent and had slightly thickened walls.

"*Anatomical Diagnosis:* (1) Bilateral pyelonephritis, acute and chronic;

(2) Acute and chronic cystitis;

(3) Acute and chronic splenitis;

(4) Degeneration of spinal cord and nerve root (non-inflammatory)."

Case 3: K. G., male, aged fifty-three. The duration of the patient's diabetes was about five years. During this time there had been practically no diabetic control. Five weeks before admission, he developed rather severe pains in the thighs, knees and ankles, accompanied by sensations of heat and cold, followed by clammy sweating of the lower extremities. He lost forty-two pounds and his strength and endurance were very poor. He walked with difficulty at night, had a steppage gait and poor judgment of distance. He often staggered and was unable to balance. He did not feel dizzy. He had been unable to sleep due to pain.

Examination revealed a small, poorly nourished and poorly developed adult. The pupils reacted to light very sluggishly. The muscles were very atrophic and flabby. The deep tendon reflexes were obtained with difficulty. No disturbances of sensation were demonstrated. The Romberg was markedly positive and the gait was extremely ataxic. There was no cranial nerve or cerebellar involvement. There was no evidence of bladder dysfunction. Spinal fluid examination: Cell count four mononuclears, globulin two plus, reducing substance increased. Spinal fluid Wassermann negative in all dilutions; blood Wassermann normal. Blood counts were normal.

The patient was hospitalized and treated by the use of heat, salicylates, iodides and accurate diabetic control. He reported at a later date that his symptoms had subsided and that he was progressing satisfactorily.

Case 4: C. V. This patient was admitted to the hospital with uncontrolled diabetes of several years duration. The pupils reacted sluggishly to light but not to accommodation. An old hemorrhage in the retina of the left eye was noted as well as many small retinal hemorrhages. The blood sugar was two hundred and fifty. The patient was extremely morose, inclined to feel that his money was being taken under false pretenses and unwilling to coöperate in treatment. He was quite drowsy from time to time without apparent reason. He had marked difficulty in walking, with a definite steppage gait, and traveled on a broad base. He complained of nocturia and day frequency but was still able to control the urinary stream. On examination, the patient was fairly well nourished. Aside from a generalized arteriosclerosis, the general physical examination was unimportant. The muscles were extremely atrophic, flabby and weak. Deep tendon reflexes in the lower extremities were absent. Romberg was markedly positive. The sensation of heat and cold was impaired over both legs, particularly the lateral surfaces. No sensory involvement was noted. The prostate was not enlarged. Spinal fluid: Cell count five, globulin two plus, reducing substance increased, spinal fluid Wassermann negative, blood count normal, urinalysis normal except for the presence of sugar and acetone. The patient was rapidly brought under control and at the end of eight months the motor involvement of the legs had disappeared. Muscle tone and volume was improved and the patient was able to walk without staggering. His subsequent course has been satisfactory.

Case 5: C. T., who had had an uncontrolled diabetes for a considerable period of years, complained of increasing weakness of the extremities with almost complete paralysis of the left leg. In spite of irregular control, his nutrition had remained at a high level. Unlike the other patients reported, he was distinctly overweight. He did not complain of any bladder symptoms. The pain in the ex-

tremities was moderate in character but sometimes kept him awake.

On examination the deep tendon reflexes on the right side were markedly diminished and on the left side were absent. The patient flexed the left thigh with the greatest of difficulty. There was marked difficulty in going up steps, (quadriceps involvement). No sensory changes were noted. The patient refused hospitalization and further study, including lumbar puncture, could not be carried out. He was placed on a rigid diabetic regime under the care of his physician at home. Later reports indicated an almost complete return of muscle tone and power.

Discussion: The type of diabetic complication exemplified by the above case reports is apparently rare, if we may be guided by the reports in the literature. Personal communications from leaders in diabetic work throughout the country, revealed a general unfamiliarity with this type of diabetic involvement. The urological literature is equally silent in regard to diabetes mellitus as a cause of atony of the bladder. It is undoubtedly true that pain is the most pronounced symptom of this group. It differs somewhat from the pain of ordinary diabetic neuritis in the following respects:

1. It is usually confined to the legs or some particular part of the legs (i. e., the distribution is over a particular nerve or group of nerves);
2. It is much more severe than the pain of ordinary diabetic neuritis and may lead to an actual exhaustion neurosis;
3. It is markedly increased at night, very often interfering greatly with sleep.

In these cases both pain and lameness were extremely prominent symptoms. The latter may actually be overlooked unless a careful examination is made with the patient out of bed. A simple test is to have the patient arise from a sitting position in a chair without assistance. Dorsiflexion of the foot which is opposed by the examiner will often reveal evidence of peroneal paralysis. An attempt to walk upstairs usually leads to disaster. The paralysis may vary from a slight loss of power of the quadriceps and peroneal muscles to a complete inability to walk. The loss of the knee reflex is, no doubt, equivalent to the degree of muscular weakness. It is, of course, essential to eliminate all other causes of the disability, such as tabes dorsalis, pernicious anemia, arthritis of the spine and tumors of the spinal cord.

These cases undoubtedly represent the results of long continued imperfect diabetic treatment. The damage is due to an accumulation of effects rather than any immediate injury.

Etiology of Changes in the Nervous System Leading to Paralysis: An attempt to explain all the manifestations of diabetic neuropathy leads to interesting theorizing but it is difficult to present real proof to substantiate any of the theories. Factors which have been proposed have been: (1) unknown intermediate metabolites; (2) dehydration; (3) cachexia; (4) arteriosclerosis; (5) complicating infections and (6) deficiency of vitamins A and B. Only a few experimental studies have been made. Auche[6] applied solutions of sugar to the sciatic nerve of guinea pigs, locally and by injections. He concluded that the increased sugar content of the blood, lymph and spinal fluid had no effect on the nerves. He did not believe that sugar was a cause of degeneration. Eichhorst[13] kept the nerves of frogs and men in solutions of dextrose, acetone and oxybutyric acid for several days without effect. Nerve degenerations have been noted in various chronic infectious diseases such as tuberculosis and syphilis. It is probable, however, that these changes are merely a part of the generally poor state of nutrition of the individual and are not produced by any specific effect of their infections. It is hard to believe that the process spoken of as intoxication by metabolites (presumably glucose, acetone and oxybutyric acid) would be capable of producing the observed changes.

It is a well known fact that acidosis is usually more prominent in young individuals. One would therefore expect a more frequent occurrence of diabetic neuropathy in the

younger age groups; as a matter of fact, the reverse is true.

Nervous system manifestations in the young are extremely rare. Woltman and Wilder[7] feel quite confident that the changes in the nerve trunks are directly due to arteriosclerosis just as degenerative changes take place in the soft tissues of the feet following atherosclerosis. They base their opinion on the fact that arteriosclerosis was present in all the cases which they studied. In addition, the more severe the vascular disease present and the lower the level of the nerve examined, the more marked were the changes in the nerve trunks. This coincides with the work of Jordan, Randall and Bloor[1] who found that sections of nerves removed from patients with diabetes contained very low phospholipid, cholestrol and cerebroside values and found these changes much more marked in the distal portions of the nerves examined. The same authors have suggested that a lipolytic enzyme could conceivably produce the neural damage. If the neural pathology is due to arteriosclerosis, it is difficult to understand why control of the diabetes rather regularly results in marked improvement in the various paralyses. The obstruction of a nutrient artery to the nerve is not overcome by controlling a hyperglycemia. Consideration of the cases which we have reported above reveals at once that all cases have two factors in common; namely, arteriosclerosis and diabetes uncontrolled for a considerable length of time. It is possible that in such patients there is either a very low intake of vitamin A or B or both, or there is an inability to metabolize these factors. Zimmerman and Burach[3] have demonstrated that in rats, pigeons, and dogs, demyelination was produced in the peripheral nerves of the animals deprived of vitamin A and water soluble vitamin B. Myelin destruction was most severe in the nerves of the extremities. The lesions produced by the absence of vitamins A and B from the diet are comparable, if not identical with those seen in pernicious anemia. If we are to look upon these neurologic complications as the result of vitamin deficiencies, we may more easily explain the rather rapid improvement which is noted following adequate diabetic therapy.

Pathologic Anatomy: Various authors disagree as to the point of greatest involvement. Woltman and Wilder[7] state that the degeneration noted in the three spinal cords examined was very slight and could easily be explained on the basis of age and arteriosclerosis. Other authors have noted definite changes in the cord or in the nerve roots. Root and Rogers[4] mentioned the demonstration of numerous corpora amylacea present in the dorsal part of the cord and in white and gray matter. There was also a slight diffuse gliosis of the dorsal columns. These changes were found both in the thoracic and lumbar cord. The increase in total protein of the spinal fluid is mentioned by these authors and is a constant finding in our cases. In both of our patients exhibiting bladder paralysis, the lesions were so extensive as to suggest an actual transverse myelitis. For this reason, we are inclined to believe that in the more severe cases exhibiting actual paralysis of the extremities or bladder that various portions of the spinal cord are involved. When this is true there is, no doubt, a concomitant involvement of the nerve roots and the nerve trunks. All authors agree that the essential change is the patchy or nodular degeneration of the myelin sheath. In striking contrast, the axis cylinders are well preserved. This demyelinization varies from slight thinning of the myelin material to total absence of this substance. Williamson[14] in a description of a quite typical case noted the degeneration of fibers of columns of Goll and Burdach with changes in the posterior nerve roots. Other authors have reported demonstrable changes in the lateral columns and in the anterior horn cells.

To summarize, I feel that it is safe to say that advanced degrees of diabetic neuropathy are represented by degeneration of fibers in the dorsal and lateral columns and anterior horns of the spinal cord, marked de-

generation of the nerve roots and extensive demyelinization of the peripheral nerve fibers.

We have attempted to point out certain changes which may be and are frequently produced in the nervous system by the action, direct or indirect, of diabetes mellitus. These changes produce a wide variety of neurologic manifestations, involving the higher functions of the cerebrum, the cranial nerves, either singly or in various combinations. In addition to these miscellaneous manifestations, we have cited five cases with one autopsy to illustrate the syndrome which is produced by diabetes and which markedly duplicates in every way the manifestations of tabes dorsalis. This syndrome is characterized by progressive weakness and paralysis of the lower extremities and either partial or complete paralysis of the bladder. Before making such a diagnosis it is necessary, of course, to establish the presence of diabetes and to eliminate other diseases which might produce similar effects upon the spinal cord; namely, syphilis, pernicious anemia, cord tumor, arthritis of the spine and trauma. In a recent publication Lendrum and Moersch[15] reported on the neurological diagnosis in two hundred and fifty cases of cord bladder, diabetes being conspicious by its absence from this list. We urge that diagnosticians bear in mind the probability of the production of central nervous system lesions by a manifest or latent diabetes.

From the histologic studies of our own case, from the clinical manifestations and from the observations of others, we are inclined to feel that the changes encompassed by the term "diabetic neuropathy" are not confined to the peripheral nerves but occur in various portions of the cord as well. These changes consist principally of degeneration of fibers of the cord and nerve roots, followed by moderate gliosis of the cord and marked demylenization in the peripheral nerves.

Summary: 1. Diabetes mellitus is incriminated as a fairly frequent cause of lesions in the central nervous system;

2. A variety of clinical manifestations of such lesions is detailed;

3. The location of the principal types of lesions and the possible mode of production by diabetes is discussed;

4. Five cases exhibiting a well defined syndrome produced by diabetes mellitus and characterized by paralysis of the lower extremities and bladder are described.

BIBLIOGRAPHY

1. Jordan, W. R., Randall, L. O. and Bloor, W. R.: *Neuropathy in Diabetes Mellitus.* Archives of Internal Medicine, Vol. 55, No. 1, January, 1935.
2. Wohl, M. G.: *Avitaminosis in the Course of Diabetes.* J. A. M. A., Vol. 87, 901, September 18, 1919.
3. Zimmerman, H. M. and Burach, Ethel: *Lesions of the Nervous System Resulting from Deficiency of the Vitamin B Complex.* Archives of Pathology, Vol. 13, February, 1932.
4. Root, H. F. and Rogers, N. H.: *Diabetic Neuritis with Paralysis.* New England Journal of Medicine, Vol. 202, No. 22, May 29, 1930.
5. Zimmerman, H. M.: *Lesions of the Nervous System in Vitamin Deficiency.* Journal Experimental Med., Vol. 57, No. 2, February 1, 1933.
6. Auche, G.: Arch. d. med. exper. et d'anat. path., Vol. 2:645:1880.
7. Woltman, W. H. and Wilder, R. M.: *Diabetes Mellitus: Pathological Changes in the Spinal Cord and Peripheral Nerves.* Archives of Internal Medicine, Vol. 44, 1929, No. 4, P. 576.
8. Major, R. H.: *Tabes Diabetica.* J. A. M. A., Vol. 83, No. 25, December 20, 1924, p. 2004.
9. Priestley, Jas. B.: Proceedings of the Staff Meetings of the Mayo Clinic, Vol. 6, No. 35, September 2, 1934.
10. Mauriac, Broustet and Traissac: *Nervous Complications of Diabetes.* Paris Med., 2:19, 1932.
11. Bouchard: Proges Med., Vol. 12, p. 819 (1884).
12. Sevringhaus, E. L.: Am. J. Med. Sciences, Vol. 182, p. 311, 1931.
13. Eichhorst, H.: Archives of Path. Anat., Vol. 127:1—1892.
14. Williamson, R. T.: *Review of Neurology and Psychiatry.* 1907, Vol. 5, p. 1550.
15. Lendrum, F. C. and Moersch, F. P.: J. A. M. A., March, 1934, Vol. 102.

PHAGOCYTOSIS

Elie Metchnikoff, a pioneer biologist and philosophical idealist, was born in 1845. Adolph Beilin tells of his subsequent career in a brief sketch appearing in the December *Hygeia.*

It was after many years of intensive experimentation on animals of every classification and species that Metchnikoff published his first observations on "Intracellular Digestion in Lower Animals" in 1881, thus establishing his great biologic discovery of phagocytosis. Metchnikoff's studies and experiments on various groups of animals contributed much to the foundation of comparative embryology.

PEPTIC ULCER*

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SINCE its first clinical description by Cruveilhier more than a hundred years ago, peptic ulcer has been an almost constant storm center in medicine as regards origin, diagnosis, symptomatology, and especially, treatment; first, a bitter conflict between clinicians and surgeons as to whether its therapy should be medical or surgical. After that had been definitely determined by the realization of the fact that each has its essential part in the treatment and neither could exclude the other, this was followed by an almost equally virulent battle between the proponents of the various diets, drugs, medicinal agents, and between the exponents of various types of operation. These controversies are still unsettled. The reason for this is apparent when we realize how we are still ignorant as to the cause of ulcer, how divergent are the views as to what factors play the fundamental rôle! In other words, how uncertain we still are in regard to that most paramount question in every disease—its fundamental and primary etiology.

Etiology: We do not know the primary cause of ulcer. The work of Ivy and other physiologists show that the reflux of alkaline fluid from the duodenum plays an enormous rôle in preventing the development of ulcer, but that is a far cry from saying hyperchlorhydria is the primary cause of ulcer.

Rosenow and others have been able to reproduce ulcers by injecting streptococci obtained from the mouth or sinuses in cases of ulcer. But this again is far from saying that infection due to trained microorganisms is the primary cause. Subcutaneous or intravenous injections of various proteins in certain cases unquestionably relieve some symptoms of ulcer and definitely lessen hypertonus and pylorospasm, but this does not prove that allergy is the primary cause of ulcer. Experimental injection of various substances in the vessels of the stomach may produce experimental ulcer, but this again is no proof that the primary cause of ulcer is vascular, although unquestionably a certain number of ulcers come from sclerosed arteries, small aneurysms, thrombi or emboli. It is well to remember that Virchow's original belief was that this was the primary cause of ulcer.

Reflex disturbances from elsewhere, notably from a diseased appendix or gallbladder may produce pylorospasm, hyperchlorhydria, delayed emptying, possibly constriction of certain vessels, and these may lead to ulcer. But again this does not say that the primary cause of ulcer is due to disturbances elsewhere. The experimental development of ulcer on a diet low in vitamins is of course well known, but here again this is not proof that ulcer is a deficiency disease. Partial destruction of the adrenals may produce gastric or duodenal ulcer, but this does not mean that ulcer is due to adrenal splanchnic dysfunction. Vagectomy occasionally succeeds where all other forms of treatment fails, but this again is not proof that the vagus is primarily responsible for ulcer.

Finally it is a well known fact that shock and psychic disturbances of all kinds can bring about a recrudescence of the ulcer syndrome in those who have had an ulcer history, but this again does not prove that ulcer is a psychogenic rather than a physical problem, although the proper handling of the psychic and emotional side plays an enormous rôle in the treatment and prevention of ulcer.

All of these factors probably play a secondary rôle. Possibly in certain cases they may

*Read before the Section on Internal Medicine, West Virginia State Medical Association, at Wheeling, on May 6, 1935.

play a primary rôle. Each must be considered in the treatment and prevention of ulcer as we shall see later. Perhaps after all, ulcer comes to those with a certain body form—the orthotonic, or, in those with a certain type of vegetative nervous mechanism—the so-called vagotonic, and in such persons may possibly be produced by one or more of a variety of causes. Nevertheless, if there is a true primary cause, until we find such a cause, the scientific prevention of ulcer is difficult or impossible.

Ulcer always arises from the digestion of a localized area or areas of gastric or duodenal mucous membrane unless we believe that mural involvement is primary; mucosal, secondary. But what causes this autodigestion? Not the hydrochloric acid alone, for many patients have persistent high acid readings and yet no ulcer develops, and in many cases of ulcer the acid readings are higher in the periods of remission than in those of activity. Something must lower the resistance of these affected areas. Is it, as Babkin suggests, due to some variation in the relative amounts of acid and pepsin and protecting mucin secreted simultaneously — an increase of the former two, a diminution of the latter—due to some disturbance in sympathetic and parasympathetic activity, of local or reflex or psychic origin, for each of the four types of cells has a somewhat different innervation and imbalance could theoretically produce such a condition? Or is it due to some disturbance of the mucoprotein in these cells? Is it fundamentally of vascular origin? Has something produced a lessening or shutting off of the local blood supply with blanching of the mucous membrane due to lessened circulation, lowering of cell resistance with cell death, and subsequent digestion by the gastric juice? Is this disturbance in blood supply due to pyloroplasm, secondary to local pyloritis or of reflex origin from disease elsewhere—appendix, gall-bladder, etc? Or is it purely psychogenic in origin? Or is it due to true local vascular disease — sclerosis or thrombosis or embolism or small aneurysm? Is it due to lack of regurgitation of the alkaline fluid from duodenum and upper jejunum, as is certainly suggested by some of the experimental work of Ivy and others? Is there usually a preceding gastritis and duodenitis, due to a great variety of causes—food, drink, alcohol, careless habits of eating—that may lead to this chronic inflammation? With our modern tendency always to lay special stress on functional disturbances due to the strain of life, to maladjustment, to the great variety of psychic traumata to which we are all exposed, may we not have forgotten that after all organic disease and chronic inflammation are still with us and must be considered as well?

The enormous amount of work, especially that emanating from Germany, suggests very strongly that there is a close relationship between chronic gastritis and duodenitis and ulcer, and has brought back to us the importance of objectively recognizing these conditions by more careful study of gastric and duodenal contents, by new and refined methods of visualizing rugae and mucous membrane by x-ray and possibly by gastroscopy.

It is an undeniable fact that gastritis or duodenitis may precede or may follow or may accompany ulcer, and that the symptomatology of the two conditions may be practically exactly the same. Faber goes so far as to say in gastritis we must seek the causes of ulcer, but I personally am not convinced as yet that it is not more likely that gastritis is associated or follows ulcer rather than precedes and causes ulcer.

Certain workers believe that the omentum plays a large rôle in certain cases, that infectious thrombosis of its vessels, the infection arising primarily from a diseased appendix or diseased gall-bladder, furnish the focus from which septic emboli travel to gastric or duodenal vessels with subsequent ulcer.

Have we paid too little attention to infection as the primary cause of ulcer? May it be a primary, as well as a secondary factor, and may it originate in many foci—gums,

tonsils, sinuses, appendix, gall-bladder, colon, prostate, urinary tract, or as a sequel of certain general infections, acute or chronic? Are toxic as well as infectious factors of importance? Possibly because we know that in nephritis, gastric or intestinal ulceration is not uncommon and we are all familiar with the ulcer (which must be toxic) that follows skin burns, accidental or experimental.

It is impossible of course to more than touch upon these questions, which are of such paramount importance as regards the etiology of ulcer, but as regards the equally important question, factors involved in the recurrence or chronicity of ulcer, our knowledge is more definite. Trauma here seems to play the major rôle — psychic or nervous trauma, mechanical, thermal, infectious. Ivy summarizes these factors as follows:

1. Infectious;
2. Mechanical effect of food on motility and secretion;
3. Blood flow and fibroblastic reaction;
4. Allergy;
5. Nutrition or digestive disturbances;
6. The corrosive or irritating effects of the gastric contents—food, alcohol, coffee, tobacco; some incidentally lay special stress on the last. Enriquez thought excessive use of salt was the cause of ulcer and treated his patients on a salt free diet;
7. Mucosal susceptibility.

And may we add to this constitutional tendency as definitely shown by Macklin and others and various psychic factors—fatigue, worry, overwork, fear—for to me, one of the most important of all causes for the recurrence of ulcer is some form of psychic trauma.

Incidence: Ulcer is much more common in men than in women. Its incidence varies very greatly in different parts of the world. For example, ulcer is much more common in northern Europe, Denmark, North Germany and England, than in southern Europe, Italy and Spain. But whether this is due to a difference in racial characteristics, somatic or psychic, or to climate, or to habits of food and drink, one cannot say. Ulcer became far more frequent in Russia after the war. Was this due to a too coarse, or to an insufficient diet, or to the postwar mental depression and worry?

McGarrison found practically no ulcer among the hill tribesmen of northern India. Is this due to the complete absence of meat and the superabundance of raw fruits and vegetables in their dietary, or is it because in their Himalayan fastnesses they are removed from depressions, stock market crashes and the other addenda of this madly speeding machine-driven age.

But from these studies of ulcer, its relation to race and climate, to diet and habits as regard drinking and smoking, to varying social and economic conditions, we may possibly some day learn more about the primary cause of ulcer.

Symptoms: There may be no symptoms whatsoever throughout life and the ulcer only found at autopsy. The first symptoms may be perforation or extensive hemorrhage. Gastric ulcer may have symptoms of a functional dyspepsia or of a gastritis or it may have the classical syndrome discomfort almost immediately after the intake of food, but it is well to remember that the diagnosis of gastric ulcer is very uncertain and the symptoms very indefinite. In fact, one never feels really certain about such a diagnosis unless there is persistent occult blood in the stool and persistent defect in the fluoroscopic studies and x-ray films. The story of duodenal ulcer is entirely different. It is generally diagnosed correctly in a large majority of cases. Fortunately it is met with from three to eight times as frequently as is gastric ulcer. Its usual symptom complex is so characteristic that it gives us our diagnosis in most cases, although of course such a diagnosis must be confirmed by stool and x-ray studies.

The pain is punctual in appearance—usually from two to four hours after meals. It is a hunger pain and is relieved by the intake of food or alkalies. It is often so punctual that one can set his watch by it. But perhaps its most striking characteristic, is its periodicity.

This is peculiarly interesting—a patient may have symptoms from four to six weeks, once or twice a year, usually spring and fall, and be completely free from symptoms during the rest of the year. Why they should be so much less prevalent in winter and summer, we are unable to say. It suggests the possibility of an endocrine or allergic factor, but there is no proof of this.

In the diagnosis of gastric and duodenal ulcer, unlike gastric cancer, pain is of paramount importance. While it may be atypical, in the vast majority of duodenal, and in a considerable number of gastric ulcers, it gives us our first clue to the diagnosis.

The localization of pain in duodenal ulcer, its periodicity, often its almost clocklike punctuality, its relief by soda and by food, its peculiar and inexplicable tendency to recur in the spring and fall for a period of varying length, three to six weeks as a rule, its long period of complete remission of all symptoms, gives us such a definite picture that Moynihan was wise when he said "with such a picture, I need little else to convince myself we are dealing with a duodenal ulcer."

The cause of this pain is still undecided. The old idea of the ulcer being irritated by acid is certainly not correct for there are practically no pain nerves in the abdominal viscera and there would have to be involvement of an enormous area by the pathology present for the pain to be explained in the usual mechanism obtaining elsewhere. Hyperchlorhydria cannot be the cause, because often the acid readings are much higher during the period of remission than during the period of activity of the ulcer. Hypertonus, increased tension and hyperperistalsis probably play the major rôle, but this again does not explain pain in all cases. Recently it has been suggested that it is not the ulcer but the associated gastritis or duodenitis that is the cause of pain.

It is probable that our best explanation of pain is an increased tonus or tension in an organ, by some form of viscerosensory reflex, it is interpreted by us as pain. Appetite is usually increased in ulcer, and frequently when the patients say they have no appetite, further consideration will show that the appetite is normal or even increased, but that they have a fear of food—a sitophobia—because of the discomfort food sometimes produces, especially in the gastric cases. I am always dubious about cases of uncomplicated ulcer when a patient has a real diminution or complete lack of appetite.

Of course such lack of appetite may be met with in certain complications — obstruction, extensive adhesions, or the rare and more serious beginning malignant degeneration of gastric ulcer. But in the majority of cases diagnosed as ulcer, if lack of appetite is present, it is a suggestion the condition is either functional or a reflex gastric disturbance from disease elsewhere, notably the gallbladder or appendix, or possibly a gastritis or duodenitis.

Multiple Ulcers: While as a rule ulcers are single, more than one are present in a certain number of cases and as many as sixteen have been described. Strange to say these multiple ulcers seem much more common in Europe than in this country.

Acid: It is an interesting fact that the acid readings after test meals are sometimes much higher during the periods of remission where there are no symptoms of ulcer than in the period when the ulcer symptoms are most striking, possibly due to the fact that in the acute stage there is often an associated gastritis which brings about an inhibition of gastric secretion, possibly due to the fact that this associated gastritis is the cause of an excessive mucous secretion which neutralizes a certain amount of the acid secreted.

If the histamin or fractional test meal shows a real achylia and ulcer is present, you may be quite sure the ulcer came long before the appearance of the achylia, because free hydrochloric acid is essential in the formation of ulcer. Of course the achylia may have come later due to a variety of conditions—chronic infection of the teeth, sinuses or tonsils; the arthritides, both metabolic and in-

fectious; chronic gall-bladder disease of long duration; chronic cardiac and renal disease.

Rare Types: Duodenal ulcer offers in the main a rather clear-cut clinical picture. There are, however, some very unusual types which should never be forgotten. First, where the picture is entirely that of gall-bladder infection with recurrent attacks of common duct obstruction and jaundice, first described by Bickel. I have seen a number of these cases and they are very puzzling. There is not one suggestion of the ulcer syndrome. They are due to an ulcer in the second portion of the duodenum, symptomless as regards the duodenum, near enough to the common duct to cause periodic attacks of biliary tract infection.

It is interesting to remember that the reverse is also true; that is that the disease is in the gall-bladder, cholecystitis usually associated with stones, but where the symptoms are absolutely typical of duodenal ulcer,—hunger pain, relief by alkalies or food, periodicity, etc.—where the x-ray often shows persistent defect, probably due to adhesions from the gall-bladder and where bleeding, sometimes even extensive hemorrhage, may take place, presumably due to marked dilatation of the duodenal veins, secondary to gall-bladder disease.

It is essential to realize that an x-ray diagnosis of ulcer is far from infallible. Many cases are diagnosed ulcer which are in reality not ulcer, but represent reflex spasm, deforming adhesions, or the pressure of other organs. Among the most interesting are those where diffuse infiltrating carcinoma of the lesser curvature of the stomach shows no gastric defect, but only a persistent duodenal deformity, and those cases where the duodenum is the site of the disease and the defect is only noted as a reflex spasm in the gastric side of the pylorus. Also we must remember that very small superficial ulcers or erosions may give no x-ray evidence of disease and that ulcers in certain positions are not demonstrable by rôentgenological studies. It is an unfortunate feeling among many that the x-ray is the court of last resort in ulcer. This is not true. There is no court of last resort. Every bit of the puzzle has to be pieced together judicially, carefully, scientifically, before the diagnosis is justifiable.

Another atypical form is where the symptoms are entirely intestinal, colicky pain, diarrhea, etc. Whether this is due to an associated functional or mild organic disturbance of the pancreas, one cannot say, but the diagnosis is often extremely difficult.

Lastly where the ulcer degenerates into carcinoma, unknown in duodenal ulcer and possible, but rare, in gastric ulcer. In our series about five per cent of gastric ulcers undergo malignant degeneration; in the last two German series 1.8 per cent and 3.2 per cent respectively. It is well to remember that sometimes it is impossible to tell whether we are dealing with an old callous ulcer or a scirrhus. The surgeon is often unable to tell at the time of the operation; sometimes even the pathologist cannot tell when he cuts the sections.

One must never forget that the size and the depth of the ulcer has absolutely no relation to the severity of the symptoms. A small erosion may give far more severe symptoms than a large callous ulcer. It must also be remembered that the large hemorrhages are more likely to come from the small erosion or small ulcers than from the large ulcers.

If a patient has had a history of recurrent hemorrhage and the surgeon in his exploratory laparotomy is unable to palpate the ulcer, it is a wise rule to remember this fact and insist that the surgeon open the stomach or duodenum and find the causative ulceration; sometimes extremely difficult to do especially in the period between hemorrhages. It is one of the real justifications for operating while the patient is bleeding in this type of case.

Treatment: The treatment of ulcer is of course divided into treatment of the ulcer during the acute stage, the treatment of those with ulcer history who have no active symptoms and methods to minimize the chances of recurrence, and the treatment of the various

complications—perforation, hemorrhage, obstruction, deforming adhesions, and potential malignant degeneration, this last a question of considerable importance in gastric ulcer, of no importance whatsoever in duodenal ulcer as no duodenal ulcers degenerate into carcinoma.

Handling of the Acute Ulcer: Acute superficial ulcer is a self-limited disease. It tends to spontaneous recovery irrespective of treatment and this of course is the reason for the absurd number of diets and the varied treatments which have been brought forth as so-called specific cures.

The diet must of course be non-irritating, thermically, chemically, mechanically. It must not stimulate too much acid secretion and must have high acid combining power. It must be given at sufficiently close intervals to prevent the presence of much free acid in the stomach and duodenum because unquestionably the presence of much uncombined acid is one of the causes of the hypertonus and hyperperistalsis, which we interpret as pain. It must, if possible, inhibit secretion, the reason of course, for the use of cream, olive oil and other simple fats. It must have sufficient caloric value to build up the patient and to increase his resistance. These are the principles of dietetic treatment in ulcer.

Some cases do better with one, some with other forms of diet, but in all, these principles should be followed. Hourly feedings seem to me perfectly absurd—a great hardship on the patient and unphysiological, for unquestionably the ulcer heals better in a mildly acid, than in an alkaline medium, as Sippy supposed.

Ulcer tends to heal spontaneously and unless it rapidly penetrates and produces perforation or its situation in the vicinity of a large vessel brings hemorrhage, this spontaneous cure is unquestionably the rule in the vast majority of cases irrespective of treatment. It is certainly the reason for the optimism held by the proponents of various special diets and special cures which they regard as specific. Often ulcer heals not because of, but in spite of, treatment. It was not the magic of the Sippy treatment but the magic of the Sippy personality that made him so successful in this field, for he was one of the few who could make his patients follow the aftercure almost indefinitely, both dietetically and medicinally, even psychically, and this is the real keynote in the proper treatment of ulcer.

Some patients do better on milk and cream; others on cereals; others on albumen, gelatine and olive oil. But the vast majority of patients do best on three very carefully selected soft or liquid meals, with intermediate and bedtime additional nourishment in the form of warm milk, cereal gruel, cream, raw eggs, etc.

This diet is no hardship and can be carried out in the ambulatory treatment of ulcer so that the patient can carry on his occupation during his cure. In a few cases, the meat diet of Lenhartz succeeds where other diets have failed.

With very severe pain, with extensive bleeding, of course bed rest is essential for a certain period of time, but in my experience, in the majority of cases of ulcer without severe pain or hemorrhage, the ambulatory treatment is better than the bed treatment. I am quite convinced that mental rest is of far greater importance than physical rest; that a placid mind speeds recovery far more rapidly than a flaccid body.

We must of course individualize our cases. Some do well on one form of treatment, some on another. We must not have any hidebound medical or physical therapy. Alkalies help most, but not all patients. Of the alkalies, calcium and magnesium salts are physiologically the best, but soda often helps more although there is very little proof that soda lessens hydrochloric acid secretion, as unquestionably calcium and magnesium do.

In cases of autonomic imbalance of the vagotonic type, the cases where vagal irritability is preponderant and pylorospasm and hyperacidity the rule, belladonna or atropin is immensely valuable, but only in very large doses, just below the point of physiological

tolerance. In the very nervous, mild sedatives are often invaluable—bromide, luminal, hyoscyamus or mixtures of these. In certain cases olive oil before meals or a large dose of olive oil on waking is very helpful for it relieves pylorospasm, increases the regurgitation of duodenal alkaline contents and lessens hydrochloric acid secretion.

The cure of uncomplicated ulcer is easy. As we said before, it tends to heal spontaneously if it is given a little help and a chance, but this is the easiest part of our problem. The prevention of ulcer in those who have had an attack is the difficult problem and here it is essential for us to realize what is the most likely cause of such recurrences. Is it infection? In my experience it is in but a small group of cases, although of course it is always wise to minimize or eliminate infection in the teeth, tonsils and upper respiratory tract. Is it due to indiscretions in diet? Probably a considerable group of cases fall in this category and it is a wise procedure for an almost indefinite period of time to eliminate roughage, condiments, and highly seasoned foods from the diet, and if possible, also coffee, tobacco and alcohol. Is it due to strain, shock, worry or fatigue? These in my experience are the causes of the recurrence in a large number of cases, possibly in the majority, and it is in this group that the art, rather than the science, of the physician must be called upon. The doctor must find out the cause of such upsets. Is it in the home or in the office? Can it be corrected? Can he be reeducated? Can he be given insight into his psychic problem and can the problem itself be adjusted? This is the major problem and this tests the real ability of the physician.

We have only time to mention a few of the myriad treatments suggested for ulcer—colloid silver and other metals, mucin, sodium benzoate and sodium citrate intravenously, hypodermic injections of a great many proteins, some regarded as non-specific, others as specific—milk, sera, dead bacteria, wheat protein or various preparations of histidin, etc. Their proponents have usually claimed for them specificity, but in our experience, while some of these may unquestionably give temporary help, mainly in the relief of pain, none has added materially to our major problem—the cure and prevention of ulcer.

I have often felt that certain forms of treatment suggested must, like crossing the Atlantic in midwinter or, possibly, matrimony, represent the triumph of hope over experience.

Do not become the blind devotee of any special diet, drug or operation. Individualize every case, study the patient's psyche and the patient's soma. Learn all that you can about his hopes and fears, his successes and his disappointments, his home life, his habits as to food and drink, and with this knowledge plan each case separately as to its proper treatment—hygienic, psychic, dietetic, physical, medicinal—both in the acute stage and in the period of remission.

Hemorrhage: The treatment of hemorrhage *per se* is of course simple. Absolute rest, complete starvation for a short period of time; transfusion, if hemorrhage is great, possibly glucose and soda by rectum. On the other hand, if the bleeding is very slight, these patients can be treated successfully in many cases and the bleeding stopped just as quickly by ambulatory, as by bed, treatment.

When should we operate in the case of hemorrhage? My own feeling is that not after the first, and possibly not after the second hemorrhage, but if the patient has repeated extensive hemorrhages, possibly three, surgery should be seriously considered. But as regards surgery, I feel extremely certain that the surgery should include the resection of the ulcer, for I have been bitterly disappointed when gastroenterostomies have been done in the hope that they will stop hemorrhages. In most cases in my experience hemorrhages have continued unabated.

These hemorrhages often come from extremely small erosions or small ulcers, hidden in the folds of mucosa, and in the quiescent stage sometimes extremely hard to find. For this reason I am inclining more and more to

the feeling that the operation should be done at the time of the bleeding, so that we can definitely find the source of the hemorrhage and treat it radically.

This is not a difficult procedure in the present stage of surgery when repeated transfusions, both preoperative and postoperative, can rapidly make up the blood lost.

In cases of ulcer of the lesser or even the greater curvature near the cardia, local operation is often so difficult and hourglass formation so likely that sometimes it is wiser to perform a high jejunostomy and feed the patient through this for a period of from four to eight weeks in the hope that in this length of time the complete rest of the stomach produced hereby will lead to definite healing of the ulcer.

Operations: I never could see the justification of large or subtotal resection for small duodenal ulcers. Should we operate on the ulcer itself or on the tendency to ulcer formation? In the light of our present knowledge, I should certainly say the former is the wiser course; the latter seems dangerous in principle and has been, in my experience, very disappointing in practice. One might almost as well say that a pulmonectomy should be done in patients with a tendency to pneumonia, or a nephrectomy in mild recurrent unilateral pyelitis.

My associate, Dr. Gaither, after a very careful analysis of the end results of operative treatment in ulcer, has come to the definite conclusion that the simpler the operation and the less mutilation the operation involves, the better the final result.

Marginal or jejunal ulcer usually with painful symptoms follow a certain proportion of gastroenterostomies but I believe this is mainly due to poor technique. As to the incidence of this condition the figures vary in the most surprising way. Balfour at the Mayo Clinic finds two per cent; Berg in New York, 30 per cent—an inexplicable difference in incidence!

Obstruction: Gross, high grade, organic obstruction is of course entirely a surgical procedure. It is usually in the duodenum, not at the pylorus, and any operation which relieves the obstruction gives good results. Thus a gastroenterostomy is often brilliantly successful in this group of cases, although in my experience often excessively disappointing in the non-obstructive ulcer. One must remember, however, that obstruction, as we see it, sometimes even leading to twenty-four hour or more barium retention, is made up of a group of additional factors, associated spasm, inflammation and edema, all susceptible to non-surgical treatment—rest, diet, anti-spasmodics, time—so that often what seems to be almost complete obstruction may by such treatment be shown to be only a very minor degree of delay, easily handled medically and dietetically, with practically no discomfort to the patient. It is an extremely good rule in every abdominal condition not needing immediate surgery and yet potentially surgical, to see what effect a few days of rest and careful treatment at home or in a hospital will do before deciding upon surgical therapy.

Conclusion: I have sketched briefly what has seemed to me some of the interesting problems in regard to ulcer. Our ignorance of a primary factor, if there is one, the probability of a great many secondary factors,—infection, psychic strain, autonomic imbalance, trauma of food and drink, reflex disturbances from elsewhere, hyperchlorhydria, possibly allergic factors and endocrine disturbance.

It is quite obvious that each case must be individualized and treated accordingly, in which one or several of these secondary factors should be the mainpoint of attack both in treatment of the active ulcer and the prevention of recurrence.

I have called attention to the relatively easy diagnosing of duodenal ulcer, although it must not be forgotten that duodenitis, gallbladder disease, reflex disturbances from elsewhere, notably the appendix, for instance, can absolutely simulate the symptoms, even the signs, such as irregularity of the duodenum and occult blood in the stool. Never-

theless in the main our duodenal ulcer diagnosis is correct.

I have also insisted upon the difficulty of correctly diagnosing gastric ulcer—sometimes there being no symptoms, sometimes symptoms of an ordinary dyspepsia, sometimes as the first symptom, perforation or hemorrhage, rarely a true ulcer syndrome. It is needless to say we should never be satisfied with our diagnosis of ulcer until all the proper methods of diagnosis have been utilized — careful history, thorough physical examination, study of the stool for occult blood on a meat free diet, with hemorrhoidal and gingival bleeding eliminated, very careful fluoroscopic and radiographic studies, all modern adjuvants being used to make our picture as free from errors as possible. We should, however, never accept an x-ray diagnosis alone because even in the apparently most definite ulcer, defect, spasm, pressure or adhesions may absolutely simulate the picture.

As regards treatment, I have tried to sketch the general principles, dietetic, medicinal, hygienic, surgical, and have stressed the attack upon what seemed to be the secondary factor in the individual case—psychic, infectious, allergic, food, alcohol, endocrine, autonomic imbalance, reflex disease—which must be attacked, not only to cure the ulcer but to minimize the chance of its recurrence. There should be no formula for ulcer treatment. Each case should be carefully individualized, according to its needs and its findings.

I have tried to give you my views as regards the surgical attack on ulcer—the greater the need—gross organic obstruction, deforming adhesions which prevent proper physiology—the greater the success of surgery; while in non-obstructive cases and cases without such pathology, surgical treatment is often extremely disappointing.

I have touched upon the need for immediate surgery in perforation and what seems to me the wise attitude to take in regard to surgery in recurrent hemorrhage. I have stressed my own individual feeling that if operation can include the resection of the ulcer, it seems to me it is a wise procedure, especially of course in the callous ulcer, peculiarly so if it is on the gastric side of the pylorus.

The whole picture is still unsatisfactory. We do not know the primary cause of ulcer, if there be such a cause, and we cannot therefore adequately attack it at its source. But we can recognize that certain body forms and certain forms of nervous mechanism are peculiarly likely to develop ulcer, and in these cases we should eliminate as far as possible any and all of the secondary factors. I believe psychic disturbance probably plays the greater rôle, though food, drink, infection and other factors must also be considered.

If there were one single satisfactory method of treating ulcer, the literature would not be filled almost weekly with new suggestions as regards dietetic and medicinal treatment; if there were one method of surgical attack which was always successful, there would not be such divergence of opinion between eminent surgeons as regards the proper operation—gastroenterostomy, pyloroplasty, gastroduodenostomy, various forms of resection, Polya's operation, etc.

Our only safe plan is to study each case separately, analyze all the factors which seem to obtain in that case, attack them in the proper way, plan our treatment along broad commonsense lines and realize that in the ultimate analysis it is not so much the cure of the ulcer attack as the prevention of recurrences that is our fundamental problem.

"CROSSING ONE'S BRIDGES"

A missing front tooth was the necessity that mothered the invention of bridge work, according to Dr. David W. McLean in chapter XII of "These Teeth of Mine." The article, entitled "Crossing One's Bridges," appears in the December *Hygeia*.

The life of a bridge is the life of the bone supporting its abutment teeth. That bone melts away if too much force is applied to it. The test by which it stands or falls is not its name, its shininess or its appearance in the mirror. Chewing is the test.

THE DIAGNOSIS AND TREATMENT OF OSTEOMYELITIS

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OSTEOMYELITIS is an appropriate and pertinent subject for presentation to a general medical group. This disease is quite commonly encountered, particularly by those in the ranks of general practice. Therefore, it is essential that all of us be familiar with the clinical picture and be cognizant of the proper modes of treatment. I propose to discuss it, not because I have anything original or new to offer, but rather to emphasize the absolute necessity for diagnosis during the incipient stage of the disease, and furthermore, to discuss the recognized methods of treatment, particularly emphasizing those which my experience has proven to be the most satisfactory.

Etiology: That osteomyelitis is primarily a disease of childhood and adolescence is a well-recognized fact. Only rarely is the disease encountered in adults and then it is practically always secondary to compound fracture or operative contamination. By far the greater number of cases of primary osteomyelitis are due to infection by the staphylococcus aureus; less frequently the streptococcus is the causative agent. The usual portal of entry is a minor skin abrasion, the organism being borne to the bony structures in the blood stream. In very occasional cases diseased tonsils seem to be the primary focus. Osteomyelitis may be a complication of any disease which is characterized by localized suppuration, and it is occasionally encountered during the course of severe systemic infections, such as typhoid fever.

Pathology: A clear concept of the pathological developments in this disease depends upon the recognition of certain facts pertaining to normal bone development. The region of junction between the centrally located diaphysis of a long bone and the terminal portion, the epiphysis, is referred to as the epiphyseal line, which from infancy to early adult life is a cartilaginous zone. It is here that longitudinal bone growth occurs by virtue of the osteoblastic and proliferative activities of the cartilage cells, and it is here that osteomyelitis begins in its primary form during childhood or adolescence, prior to complete ossification of the epiphyseal line. Undoubtedly these facts are related to the somewhat unusual vascular arrangement in this region. The small arterioles end in juxtaposition with the epiphyseal line. Here the venules start as small blood spaces. There is probably a certain degree of stagnation in the circulation, thereby providing ideal conditions for the deposit and rapid growth of the organism, once it is transported to this region by the blood stream. It should be emphasized that in the initial stage the disease is characterized by acute epiphysitis.

According to Starr, the infection extends along the epiphyseal line to the periosteum and travels along the shaft of the bone between periosteum and cortex, thence by way of the haversian canals of the cortex to enter the medullary canal. This latter fact accounts for the spotty appearance of the shaft of the bone upon x-ray examination.

Wilensky advocates the theory that extension into the medulla is accompanied by thrombosis of cortical vessels, which results in necrosis of the surrounding bone, the degree of bone destruction depending upon the size of the thrombosed vessel.

If now the area of infection is not drained surgically, the products of inflammation, being under tension, will break through the periosteum and extend into the surrounding soft tissues to produce an abscess.

Clinical History: The average case gives a fairly typical history. The child was sled-riding and was thrown from his sled and received a skin abrasion on his knee which was so mild that it was hardly noticed. Two or three days later there was a general feeling of malaise followed by a chill and rise of temperature varying from 101° to 106°. He complained of pain all over his body, and there may have been a delirium. One extremity was found to be tender to the touch and painful on motion. On careful examination of this extremity we usually find that the joint is not completely fixed, as in rheumatic fever or empyema of the joint, but there is motion limited to a few degrees. The tenderness is not directly over the joint but just distal to the epiphyseal line and usually only on one side. In the very early case this only involves an area of one or two inches. The white blood cell count varies from 15,000 to 40,000. There may be casts and albumin in the urine. The tongue is dry and coated. The x-ray examination is significant for the absence of any findings. I have so often seen physicians take several x-ray pictures and fail to make a definite diagnosis because no x-ray changes were found. It is most important to bear in mind that x-ray findings are always negative for from five to ten days after the onset of the disease. We can be perfectly certain that by the time the röentgenologist reports definite findings we have lost much valuable time. The infection has probably broken through to the cortex and has already formed a subperiosteal abscess. At this point there will be very definite and exquisite tenderness over the diaphysis just beyond the epiphyseal line. Probably there will be some slight swelling and some increase in local heat.

I believe that the physician who is always on the alert for this disease will find that the history is practically always as clear-cut as the one which I have outlined, and if he is painstaking in his examination, he will find the symptoms and signs that I have enumerated, with the result that the diagnosis is perfectly obvious. Unfortunately our sins are usually of omission rather than commission. I have seen many such patients in consultation with well-trained medical men and found on examination a massive, soft tissue abscess which could not have been missed, even if the doctor had his eyes closed, had he kept in mind the possibility of an osteomyelitis.

Treatment: The treatment of acute osteomyelitis is as definite and clearly indicated as that of acute appendicitis. It is better to remove a few normal appendices than to let a single one rupture. It is better, if one is suspicious of a ruptured viscus, to do an exploratory laparotomy than to wait for the time when the signs and symptoms are unmistakable. Probably it is then too late to do anything helpful. The same rule holds true with suspected cases of osteomyelitis. It is very much better to explore the bone and find nothing than to wait for the time when an absolute diagnosis can be made. You may then lose the child or see him crippled for life. I do not believe that any surgeon would ever be criticized by the family for obtaining a dry tap if he had fully explained to them what he suspected and made than understand the gravity of the situation and the necessity for quick action. Once a decision to operate has been made, the procedure is simple.

Under nitrous oxide anesthesia a small incision is made over the suspected area. The bone is exposed and the periosteum opened. A hole is drilled through the bone to the medullary canal just distal to the epiphyseal line. If nothing is found, the surgeon should continue to drill until four or five openings have been made in this region. Frequently pus will not be found until the last tap. If nothing is found, the wound is closed. The whole procedure requires only a few minutes, and no harm is done. In case pus is found, a small block of bone is removed from the shaft, the width of the medullary canal and about one inch long. A small, loosely-packed drain or vaseline pack is placed in this opening. Sometimes it is advantageous to place a rubber tube in the center of the pack to facilitate drainage. In the case of a subperiosteal

abscess pus is encountered when the periosteum is opened. The surgeon should not stop here with the idea that he is dealing with a simple subperiosteal abscess. He should open the shaft just as in the previous procedure. In such a case it may be found that pus extends several inches down the medullary canal. The cortex should be removed as far as the pus extends. In the cases which have advanced to the stage of a soft tissue abscess naturally there will be involvement of most of the shaft of the bone, because by that time the infection has spread along the shaft of the bone and has reentered the medullary canal. It is necessary to make a long incision to drain the soft tissue abscess adequately, and a number of small openings must be made along the shaft to permit proper drainage of the medullary canal. It may even be necessary to remove a portion of the cortex throughout the length of the shaft.

It is, therefore, evident that the prime consideration in the treatment of acute osteomyelitis is adequate drainage. The ideal case operated upon early will require nothing more than the changing of packing about every four to five days. Usually the healing process will be completed in four to six weeks. The treatment of the less fortunate case operated upon at a later stage is a different story. The course depends to a great extent upon the bone involved.

A case that involves the neck or proximal end of the femur requires special treatment. The first stage calls for adequate drainage. In the second stage, fixation is necessary to prevent dislocation of the head or neck posteriorly and superiorly. Fixation can be accomplished either by Buck's extension or by swinging the leg out in twenty-five or thirty degrees abduction and applying a body and hip spica cast. In case the tibia is extensively involved, a cast should be applied to prevent bowing of the leg at the epiphyseal line. Regardless of the bone involved, a retention apparatus should be used until sufficient involucrum has formed to retain the normal alignment. Needless to say, the removal of large sequestra should not be undertaken until a new shaft has developed by the formation of involucrum.

In all acute cases of osteomyelitis the temperature curve is of extreme importance. If there is adequate drainage, the temperature will remain near normal. If the patient persists in having an elevation of temperature, we may be perfectly certain that he does not have sufficient drainage or that there has been metastasis to some other bone. Curiously enough, these metastatic lesions frequently give no localizing symptoms. Usually they are discovered by x-ray. I have frequently seen metastases to the opposite femur in which the x-rays disclosed extensive involvement, when the patient had made absolutely no complaint referable to that extremity. I suppose this phenomenon is due to the fact that a certain degree of immunity has been developed, with the result that the symptoms are not nearly so acute or the infection so virulent.

General supportive measures are of considerable importance in the postoperative management of osteomyelitis. The patient should be given a well-balanced and highly nutritious diet, rich in vitamins. Liver extract, cod liver oil, and viosterol are also of value. The blood count must be kept within normal limits with repeated blood transfusions. The value of autogenous vaccines is doubtful, but I think they are worthy of trial. Some men believe that stannoxyl is of value, but I have not had any striking success with its use.

Chronic Osteomyelitis: In contrast to the acute cases, chronic osteomyelitis presents a somewhat different picture. Usually on palpation the shaft of the bone is found to be enlarged due to the formation of involucrum. Draining sinuses are observed. Of course, x-ray examination reveals marked changes in the shaft. It will be observed that there is a large amount of involucrum and the formation of sequestra. Areas of bone destruction are present also. The lesions most frequently confused with chronic osteomyelitis are malig-

nancy, syphilis, and tuberculosis. The first two present typical x-ray findings, and the last is very rare.

The treatment might be divided into two phases: the first, proper drainage, which requires saucerization; the second, postoperative dressings and general care.

It is absolutely necessary that the cortex be removed to the extreme limits of the infection, attempting to make the opening in the bone resemble a trough. In other words, the cavity at the level of the outer cortex should be the same width or slightly wider than the base in the medullary canal to prevent any overhanging ledges. Precaution should be taken not to remove an amount of cortex that would permit the possibility of a pathological fracture. In cases in which the infection is localized around a sequestrum, it is very desirable that this be removed through the sinus opening if at all possible. In practically every case in which the sinus opening is enlarged or it is necessary to remove some of the bone surrounding the sinus, sequestra will form in this denuded area, prolonging the period of healing and not infrequently requiring further operations for the removal of these new sequestra.

Various types of bones require special variations in the surgical approach which are worthy of specific discussion.

First, flat bones, such as those of the skull, pelvis, and the scapulae. Osteomyelitis of the skull probably cannot be cured without complete excision of the involved area. The same observation is true of the scapulae, but in the case of the ilium such a radical procedure, even though desirable, may not be feasible or possible. When the lesion is confined to the superior portion of the body of the ilium, occasionally resection can be done. Frequently we find considerable involvement in and around the acetabulum. It is impossible to resect the acetabulum. In this type of case I have found that usually the best results are obtained by adequate drainage and fixation upon a Bradford frame with Buck's extension, followed by the application of a body and hip spica and general constitutional treatment.

Second, tarsal or carpal bones. In case only one bone is involved, it is wise simply to excise all of the bone with the exception of the periosteum. I have had several cases involving all the carpal bones in which good results were obtained by adequate drainage and immobilization in a cast.

Third, the long bones. If there is extensive involvement, we occasionally resect the shaft en masse from one epiphyseal line to the other, leaving the periosteum intact. Needless to say, the extremity must be kept in perfect position in a plaster of Paris cast until the new shaft develops. In operations upon the fibula special care must be exercised to avoid section of the common peroneal nerve. Incisions for operations upon the femur should be made along the anterolateral surface if at all possible. In making incisions over the humerus, caution should be observed to avoid injury to the radial nerve. We must bear in mind that in operations on bones near a joint it is frequently difficult to saucerize the infected area without perforating the joint. This is particularly true in cases in which the capsule is attached beyond the epiphyseal line. In cases in which joint infections develop I have obtained the best results by the Willem method. When operating upon children, care should be exercised not to injure the epiphyseal line because it may result in distortion or complete stoppage of bone growth.

Upon completion of the first stage of radical saucerization, any one of several standard procedures may be employed. I shall enumerate and attempt to evaluate these different procedures.

First, bacteriophage as used by Albee. The theory of this procedure is that there are ultramicroscopic parasites (bacteriophage) which appear spontaneously, live, and multiply in 94 per cent of osteomyelitic wounds. This phage quickly destroys living bacteria. At the completion of the saucerization of the bone, ten cubic centimeters of laboratory bacteriophage are poured into the wound.

This is followed by a solution of paraffin and yellow vaseline, the ratio being approximately 75 to 25 per cent, depending upon the consistency that is desired. Several catheters are incorporated into the base of this mass to permit the injection of laboratory bacteriophage every two to four days. The extremity is then put completely at rest in a plaster of Paris cast. The cast is changed every two months, and a cure is anticipated in about six months. Unquestionably a wound pack of this type prevents the growth of granulation tissue through the meshes of gauze as occurs in the Orr treatment. It is possible to obtain a more equal distribution to all recesses of the wound than with a gauze pack. Healing should occur somewhat more rapidly than with other packs.

Unfortunately there are several criticisms of this procedure. According to Stewart, bacteriophage does not act well in the presence of old bacteria, colloid tissue, or colloid fluids. He also states that phage may be present without acting, because for some unknown reason bacteria may be resistant to it under certain circumstances. Bacteriophage introduced into the body is usually eliminated in twenty-four to forty-eight hours, and the dosage should not be increased because of its toxicity. Repeated doses over a long period of time are often fruitless, due to the formation of antiphage which abolishes all phage action. It has been found by test tube experiments that phage must have oxygen for lysis. It is obvious that there can be only a very small amount of oxygen present in a wound plugged as it is in this procedure. The phage technique would be ideal if it worked as well in vivo as it sometimes does in vitro, but unfortunately it does not.

Second, magnesium sulphate and glycerin tampon. This procedure was described by Hawk, who, at the completion of his primary operation, attempts to get a dry wound by sealing all vessels in the bone with bone wax. The wound is then packed with a tampon impregnated with one part glycerin and two parts magnesium sulphate. The outer wound is sealed with oiled silk, and the dressing is changed every few days to keep it clean. The frequency of these changes depends to some extent upon the temperature curve. Any increase in temperature is regarded as evidence of absorption of retained secretions. Theoretically this type of treatment prevents absorption and causes precipitation of ionized salts with destruction of bacteria. The solution is an antiseptic to the wound and has a high osmotic action. Toxins are eliminated, and wound bacteria are markedly reduced. The granulation of the wound is hastened. The advocates of this method condemn the use of immobilization by the use of plaster of Paris casts, because they feel that there is an atrophy of the bone and soft structures, circulation is impaired, proper drainage is prevented, and that all of these factors result in delayed healing. Stewart criticizes this method. He states that the magnesium sulphate acts as a narcotic on tissue cells, thereby retarding phagocytosis, that the osmotic pressure increases the rate of drainage and dehydrates the granulation tissue and phagocytes, causing an abnormal condition and death to the phagocytes. Magnesium sulphate is not an effective antiseptic, nor does it kill bacteria. My criticism of this procedure is that the frequent dressings are painful and the period of hospitalization must of necessity be very much prolonged.

Third, picric acid, glycerin, and calcium carbonate. This procedure was described by Stewart, who first packs the wound for the first twenty-four hours with a vaseline pack. Upon the removal of this pack the wound is washed with an eight per cent solution of glycerin in 0.25 per cent aqueous solution of picric acid. It is then sprayed with an aqueous solution of calcium carbonate, twenty grams to twenty-five cubic centimeters of autoclaved distilled water. The wound is then packed loosely with dry gauze. This procedure may be repeated daily if deemed necessary, if not, every two or three days. If the wound is deep, catheters may be used to inject the solution. This treatment is based on the theory

that the picric acid renders the leucosin or toxins excreted by bacteria inert by making them insoluble. Stewart believes that calcium carbonate is the active ingredient or factor of maggots. The calcium added to picric acid forms calcium picrate. The calcium ions stimulate phagocytosis. The calcium renders the wound neutral or alkaline which stiimulates healing. Furthermore, it acts as an analgesic, drainage is stimulated, and the granulation tissue resembles that which we see in maggot therapy. This method has only been used in a limited number of cases, and I have had no experience with it whatever. It seems to me that the economic factor enters the problem just as it does in the Hawk treatment. These patients have to be hospitalized during the entire course of treatment, and, of course, in the majority of cases this is financially impossible.

Fourth, Dakin solution. I simply mention this method of treatment, as it has received so much publicity in the recent past. It is quite painful and requires a great deal of nursing care and a prolonged period of hospitalization. I believe it has been discontinued by most surgeons.

Fifth, maggots. You are probably all familiar with this procedure, as it has been ably described by Baer. This method of treatment enjoyed widespread popularity for a few years, but I believe it has been discontinued by the majority of surgeans except in a limited number of selected cases. The recovery is fairly rapid and the scarring is decreased, but there are a number of criticisms. The first criticism, and it is a very important one, is the natural antagonism or disgust of the patient due to the use of living maggots in his body. This is particularly distasteful to the nervous individual. Second, maggots will not live in deep wounds with extensive drainage. Third, there is a certain element of danger from contamination with tetanus bacilli which apparently has never been completely overcome. Fourth, there is considerable expense connected with the purchase of maggots. Fifth, in the smaller towns it is difficult to obtain maggots. Sixth, there is at times considerable difficulty in keeping the maggots in the wound. Seventh, the patient must be hospitalized until he is cured. I have used maggots in a considerable number of cases but have discarded their use for the reasons enumerated. However, I must admit that if the patient is able to afford this type of treatment, it is very valuable, particularly in the rather shallow wounds.

Sixth, the Orr vaseline pack method. This procedure was first described by Orr and has been used in a large number of cases, and I believe it is still the procedure of choice. It is simple to use, the period of hospitalization is very short, and the end results are about as good as with any of the other procedures. The theory advanced by Orr is that the involved part is put at rest, which will hasten healing, and the action of the spontaneously developed bacteriophage is not impeded.

During the past twelve years it has been my privilege to treat several hundred cases of chronic osteomyelitis. It has given me a great deal of satisfaction to have assisted in restoring to health many of these long-suffering unfortunates. My keenest pleasure has been derived from the successful treatment of the youngsters entrusted to my care. Many times I have seen the roses come back into the cheeks of a child who came into the hospital looking like a living skeleton. When his pain disappears and he begins to gain weight, he soon becomes a normal individual again. All of our dressings are done under gas anesthesia. The patient is never hurt, and his confidence is retained. Instead of screaming when we go into the ward, he is delighted to see us and soon becomes a bosom friend. This is certainly a contrast to the old method of the daily inhuman dressings. He has complete confidence in everything that we do, and after the first two or three dressings he will tell us that he does not believe it will hurt very much and that he would like to have us try to do the dressings without putting him to sleep. To me the confidence of the patient and the complete change in his mental state

while in the hospital are worth several months of treatment.

Conclusion: In conclusion I would like to emphasize a few of the points which have been touched upon in this discussion.

First. Acute osteomyelitis is a surgical emergency.

Second. At the present time the diagnosis is rarely made in time to make the treatment a simple procedure. We should direct our efforts toward educating the family to call in their family physician early, just as we have educated them not to give a cathartic to a patient with right-sided abdominal pain.

Third. The physician in general practice should ever be on the alert for any suspicious cases and insist that the patient go to the hospital for surgical intervention as quickly as possible.

Fourth. In our experience the Orr treatment is the most satisfactory procedure that we have today, both for the patient and the physician.

Fifth. Pulmonary tuberculosis and osteomyelitis as a rule require a longer average period of hospitalization than any other diseases. The child who acquires a permanent disability most certainly develops a warped outlook on life. His education is neglected. His associations with other children are not the same as those of the normal child. His family have to make many sacrifices and undergo many hardships to make it possible for him to have proper treatment, and finally, if he does not have a private income and is unable to support himself due to his physical disability, he may became a permanent burden upon his local community or the state.

Truly, the importance of the problems we have been discussing cannot be overestimated.

THE LURE OF LEGENDARY MEDICINE

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THE oldest legends of medicine are found in an Egyptian manuscript known as "The Magical Papyri", which contains records of magicians who treated diseases by spells and incantations. At first, they used the spoken word, later the word was accompanied by gestures. This method of healing was called "the oral and manual rite." The latter became more popular and took the form of giving the patient mixtures of various substances to eat or drink. Some of these remedies were considered more beneficial than others and therefore survived the more fantastical ones. By this means more and more reliance came to be placed upon the remedies and less and less upon the magicians' spells. Those who were more skilled in the knowledge and preparation of drugs were no longer called magicians but were known as physicians, and the art of healing began to branch off from magic and start on its independent career. This was the first milestone in the history of medicine.

The oldest medical manuscripts were found in Egypt—the Edwin Smith Papyrus, dated 3000 B. C., and the Ebers Papyrus, dated 1500 B. C. From this source we get most of the medical lore of antiquity. We learn that astronomy played an important part in the Egyptian art of healing. They worshipped the moon and were very superstitious about its influence on the human body. They gave medicine according to the state of the moon; consulted the moon before going into war; sowing crops, marrying and cupping. Falling stars were a sure sign of a coming epidemic. They worshipped the frog, and their remedy for heart disease was a powder made from the dried skins of frogs. Modern science has found that the skin of a

frog contains a substance very similar to digitalis. Their remedy for childrens' diseases was a "skinned mouse swallowed whole." Mummies have been found with the remains of mice still in the stomach. There are abundant literary evidences of the medicinal value of mice in classical, medieval and later times. Warren R. Dawson in his book, "Egyptian and Assyrian Medicine" says that it is not wholly extinct in Europe today, and that there are people still living in England and Scotland, who in their childhood were made to swallow mice for whooping cough.

The Egyptian god of healing was Imhotep, the oldest known physician. He was buried in the mausoleum at Memphis and his tomb became a place of pilgrimages where wonderful cures were wrought. His contemporary was Marduk, the Babylonian god of medicine. Heredotus says that the people in Babylon did not depend on physicians to cure their sick, that they brought them into the market places in order that the people who passed the sick person might confer with him about his disease, to discover whether they themselves had been afflicted or had seen others, and thereby hear of a remedy. It was considered a crime to pass a sick person in silence. The people were the physicians and the market place the first step in the evolution of hospitals. The Babylonians regarded disease as the work of demons which, they said, swarmed the air, water and earth, hence the doctor was a priest-physician, and the treatment of diseases consisted in litanies and incantations. From the Code of Hammurabi, 2250 B. C. we learn that the medical profession had advanced far enough in public esteem to be awarded adequate fees by the law.

The chief god of healing in the Greek Pantheon was Apollo, who was the physician to all the gods on Mount Olympus. The wounds and diseases of his patients were cured by means of the root of the peony, therefore, doctors in Greece were first called "Sons of Peon." Apollo married the nymph Coronis and to them was born a son Aesculapius, who became the most noted of all the legendary physicians. Because of his healing power over death and disease Pluto, the god of Hades, grew jealous and complained to Zeus, who cast a thunderbolt and Aesculapius was slain. Apollo had him deified and statues of him erected on all the wooded hills and mountain sides. The people carried their sick to these statues, believing that if they slept at the foot of them, they would be healed. In a short time temples of healing grew up around these statues, the second step in the evolution of hospitals and quite an advance from the market place in Babylon. The two sons of Aesculapius were made priest-physicians and placed in charge of all the health temples. They administered such simple remedies as their knowledge permitted. The means they used for restoration of health were sunshine, pure air, fresh water, diet and rest. The temples were usually near mineral springs hence baths played an important part in the treatment. The priest-physicians assumed no responsibility, the gods they said, brought the disease and only the gods could cure it. They had no incentive to search for the cause of the disease or a remedy. Under such a system no progress could be made. Grecian medicine was a mixture of religion, magic and superstition, and little better than that of the early savage. The hobby of Aesculapius was raising serpents. In all the pictures of him can be seen two twined around his staff (the origin of the Caduceus). History says they accompanied him on all his professional calls. One was kept in each temple and it was the duty of his two daughters, Hygeia and Panacea, to feed and care for them. The serpent became the symbol of the art of healing.

In the year 450 before Christ, there emerges from out of the shadows of myths and legends the first real physician, Hippocrates, the Father of Modern Medicine. His biography written by Adams, gives his geneology through nineteen generations back to Aesculapius. Someone has said, "Beware when God lets loose a thinker on the world, for all things then have to rearrange them-

selves." This thinker made drastic changes in the field of medicine, and the first thing that he rearranged was to strip medicine of the trappings of magic and separate it from the religion and superstition of that day. He dismissed the priest-physicians and all the gods, and placed the responsibility of medicine on the shoulders of man. This was the birth hour of scientific medicine. Hippocrates is more real to us when we remember that his contemporaries were Socrates, Pindar, Euripides, Aristophenes, Sophocles and Plato. Never before nor since have so many men of genius appeared in the same narrow limits of space and time. The Oath of Hippocrates is a classic piece of literature, and contains the highest principles that medicine has ever attained. Dr. Charles Dana said that every physician should have a copy hanging in his office, and wear one in the lining of his hat.

Among the ancient legends before the time of Hippocrates is found the oath of the Hindu physician, "You must be chaste and speak the truth, not eat meat, care for the good of all living beings, devote yourself to the healing of the sick, even if your life be lost by your work. Do the sick no harm, not even in thought. Do not seek another's wife or goods. Be simply clothed and drink no intoxicants. Speak clearly, gently, truly and properly. Seek always to grow in knowledge. Do not treat women except their men be present. Never take a present from a woman except with her husband's consent. When a physician enters a house, he must pay attention to all the rules of behavior in dress, deportment and attitude. Once with a patient, he must in word and thought, attend to nothing else. What happens in the house must not be mentioned outside, nor must he speak of possible death, for such speech is liable to injure the patient. May all the gods aid you if you abide thereby, otherwise, may all the gods and the Saca before which you attend, be against you."

The legends of the apothecary shop are most alluring, and we shall leave the field of the romance of ancient medicine and go in quest for legends of drugs. Webster gives two definitions for the word drug: first, a simple medicinal substance; second, anything no longer in demand. Hence, nearly every substance when it was new and difficult to obtain was much sought after, but when the novelty wore off and it was no longer used, it truly became "a drug on the market." Compounding drugs was carried on first extensively in Egypt and was called "The Black Art." It was a mixture of alchemy and magic. The word chemistry comes from the word Khem, the ancient name of Egypt, which means "black land." The most popular prescription on the market during the medieval and Renaissance period was Mummy, which originated in Egypt and was sold all over Europe. It was made from powdered mummies, but greatly adulterated and counterfeited. Ambrose Pare, the great French physician, says that it was also made in France from stolen bodies from the gallows and robbed graves. Comparing the French mummy with the original Egyptian drug Pare said, "Nevertheless, I believe that the French is just as good as the Egyptian, for none of them are of any value." Mithradates, a famous Egyptian pharmacologist, made many attempts to find a universal antidote against snake poisons. In fact, modern pharmacology developed out of the ancient lore of poisons, at first concerned with snake vemon. The venom from the viper, asp and water snake was employed to poison arrows. In the earliest experiments, the poisons were administered to slaves and war prisoners. The well known tale of Cleopatra testing the poison of her asp on a slave before she applied it to herself, is typical of the pharmacological method of the time. Mithradates employed men to search throughout the known world to find poisonous substances of all kinds. He compounded the famous drug known as "Mithradaticum." With some variation this was later developed into the drug known as Theriac. This became the most extensively used drug of all medicinal remedies. Its main ingredient was the powdered flesh of the

viper. It contained sixty-three ingredients, all of which were worthless as remedies. The viper had immunity to its own venom so, according to the processes of medicinal reasoning, the drug was supposed to confer immunity. Theriac was used as a cure-all even to a hundred years ago. It was taken internally and also applied externally in the treatment of wounds. During the Renaissance the preparation of Theriac was an elaborate official affair, carried out under the supervision of city officials to prevent adulteration. Later, Theriac became known as Treacle, which was the term applied to sulphur and molasses, the spring tonic given by the grandmothers of the past generation.

Diascordes, a Roman surgeon in the army of Nero, (55-60 A. D.) collected six hundred different plants while traveling with the army in Italy and other countries. All of them were used for medicine, and ninety of them are in use today. He was the author of Materia Medica, which was the authority on drugs until the 17th century. He used mandragora wine as an anesthetic. This was made from the mandrake root, which played a part in early English and German folklore. There are legends of the human shape of the root and the shriek of agony that it made when it was uprooted. The shriek was supposed to cause madness to those who heard it, consequently the herb gatherers put wax in their ears in order to avoid the danger of hearing the shriek. Shakespeare has Juliet say, "And shrieks like mandrakes torn out of the earth, that living mortals hearing them, run wild."

Among ancient people who worshipped animals was found the superstition that if one ate parts of the sacrificed animal, it would placate the gods and bring good luck. Some ate the heart of the lion for courage, the lung of the fox for consumption, and the raw pancreas of a sacrificed goat for good luck. Science has demonstrated that the insulin found in the pancreas of the goat is a valuable remedy for diabetes. Cod-liver oil was used for medicine centuries before science discovered the vitamins. For centuries, burnt sponges were used for goitre and today science has discovered that iodine found in seaweed and sponges is a valuable remedy for goitre. In China, 2000 B. C., a remedy for convulsions was a powder made of dragon bones which had long been exposed to weather in places like the Gobi desert. Today, doctors give calcium for convulsions, and the main ingredient of bones is calcium. Human bones, especially the skulls of criminals, were used in compounding popular remedies of the sixteenth century. The unicorn's horn was a highly prized remedy of the medieval and Renaissance period and was supposedly derived from the mythical unicorn. In reality, it was nothing more than a piece of ivory. It was sold for enormous prices, one specimen in Dresden being purchased for $30,000 in 1655. It was said to possess power to destroy poison which had been mixed with food —a valuable dietary precaution for kings and priests of those days. In England the belief in the unicorn as an antidote for poison lasted until the reign of Charles II, when the Royal Society reported that it was useless as an antidote.

The Talismanic Legends record the use of many charms and amulets worn to prevent disease and safeguard against evil spirits. In Longfellow's "Evangeline" there is a reference to malaria as "cured by wearing a spider hung around one's neck in a nut shell." In Norfolk, England, the spider tied up in a muslin bag and pinned over the mantle, was a remedy for whooping cough. In Derbyshire, a red thread was worn around the neck to prevent goitre. The madstone is still used for the bite of a mad dog, and a rabbit's foot is still carried for good luck. One of the most interesting legends is that of the Bezoar Stone. It originated in Arabia, but after the eighth century it spread over Europe. It was supposed to prevent melancholia, and was an antidote for poisons and snake bites. The stone was found in the intestines of ruminating animals and was formed of calcium interwoven with hair and shaped into balls.

Cramp rings were very popular in England as a preventative against cramps and fits. Henry VIII continued the practice of cramp rings, even supplying the army with them. There is in existence a letter which reads, "Mr. Stephen, I send you cramp rings for you to distribute as you think best. Anne Bolyn." The practice of providing rings was discontinued by Edward VI. Queen Elizabeth had a cramp ring which she wore suspended about her neck. This is analogous to the asafœtida bag of a later day. There is an interesting exhibit of folk-medicine in the National Museum at Washington. Among many other things is a ring made of a coffin nail which had been dug out of a graveyard and worn for cramps and epilepsy. There is also a peony root which had been carried in the pocket to prevent insanity. The folklore of stones is of great antiquity and the oldest prescription in existence, discovered in Egypt by Max Muller and displayed in the Museum of Natural History in New York, is "a green stone as a fumigation against hysteria."

Among the most interesting legends of England was the Royal Touch. Scrofula or tuberculosis of the glands of the neck, was called the King's Evil. According to tradition, the practice of the King's Touch originated with Edward the Confessor. The account of its beginning is as follows:

A young woman had married a man of her own age but had no offspring by the union. The humors collected about her neck, the glands swelling in a dreadful manner. Admonished in a dream to have the infected parts washed by the king, she entered the palace and the king fulfilled this labor of love by rubbing her neck with his fingers dipped in water. Joyous health soon followed his healing hand, the lurid skin opened so that worms flowed out with the purulent matter, and in time the tumor subsided. The king commanded her to be supported at royal expense until she should be perfectly cured. In time, a fair new skin returned and hid the scar so completely that nothing of the original wound could be seen, and within a year, becoming the mother of twins, she increased the adoration of Edward's power by giving a living testimony of her cure. This miraculous ability to affect cures by laying on hands was thought to be inherited by the successor of Edward, but later it was included as a part of the divine right of kings. The practice of touching for the King's Evil developed into an elaborate ceremony. Not all the kings believed in the efficacy of their touch. In fact, King James I wished to drop the practice, but was persuaded to continue for political reasons. King William expressed his sentiments in the matter by the words he used when laying on his hands, "May God give you better health and more sense." Queen Anne was the last of the English royalty to carry on the practice. Dr. Samuel Johnson was one of the last persons touched. He was at that time four years old, and from Boswell's account it is known that he suffered from scrofula all his life. The King's Touch was not limited to English royalty, but was also practiced by the Kings of France. Louis XIV touched sixteen thousand persons on one Easter Sunday. As in England, each patient received payment as part of his treatment. The practice of touching for scrofula was terminated only a short time before the French Revolution.

Some idea of the nature and number of the drug substances used in medicine of the past day may be obtained from the records of the treatment given King Charles at the time of his death. These records are found in the writings of Dr. Scarbugh, one of the fourteen physicians called in to treat the King. "At eight o'clock on Sunday morning of February 1, 1685, King Charles shaved in his bedroom. With a sudden cry he fell backwards and had a violent convulsion. He became conscious, rallied once or twice, and after a few days, died. The first step in the treatment of the king was to bleed him to the extent of a pint, from the vein in his right arm. Next, his shoulder was cut into and the incised area cupped to suck out an additional eight ounces. After this, the homicidal on-

slaught of drugging began. An emetic and a purgative were administered. This was followed by an enema containing antimony, sacred bitters, rock salt, mallow leaves, violets, beetroot, camoile flowers, fennel seed, linseed, cinnamon, cardamon seed, saphron, cochineal and aloes. This enema was repeated again in two hours and another purgative given. The king's head was shaved and a blister raised on his scalp. A sneezing powder of hellebore root was administered and also a powder of cowslip flowers given to strengthen him. The cathartics were repeated at frequent intervals and interspersed with a soothing drink composed of barley water, licorice and sweet almond. Likewise, white wine, absinthe and anise were given, as were also extracts of thistle leaves, mint, rue and angelica. For external treatment a plaster of burgundy pitch and pigeon dung was applied to the King's feet. The bleeding was continued and to these other drugs were added melon seeds, manna, slippery elm, black cherry water, an extract of flowers of lime, lilly-of-the-valley, peony, lavender and dissolved pearls. Later, some gentian root, nutmeg, quinine and cloves. The king's condition did not improve. In fact, it grew worse, and in the emergency forty drops of extract of human skull were administered to allay convulsions. A rallying dose of Raleigh's antidote was forced down the king's throat. This antidote contained an enormous number of herbs and animal extracts. Finally, the Bezoar Stone was given." Dr. Scarbugh says further, "Alas, after an ill-fated night, His Serene Majesty's strength seemed exhausted to such a degree that the whole assembly of physicians lost all hope and became despondent. Still, so as not to appear to fail in doing their duty in any detail, they brought into play the most active cordial. As a sort of grand summary to this pharmaceutical debauch, a mixture of Raleigh's antidote, pearl julep and ammonia was forced down the throat of the dying king."

The drugs used extensively in European medicine were brought from every part of the known world. In order to obtain these drugs it was necessary to maintain commerce with distant countries. To search for a short route to India to obtain spices, lead to exploration and the discovery of America, but the spices that were sought were used in medicine rather than as condiments. The European taste did not demand aloes, opium, pepper, sandalwood, Persian rhubarb and camphor for its table; the spice trade was in reality the drug trade. The fall of Constantinople in 1453 disrupted the eastern trade, and the price of drugs rose to such a height that the Portuguese and Spaniards competed for the supremacy of the sea and the control of the drug trade. Like Vasco de Gama, Columbus was seeking a direct route to India, the world's drug market, and instead, landed in America.

From the legends of ancient medicine we learn that surgery and obstetrics were the most neglected subjects. It is a long way from the barber's pole to modern surgery, and from the obstetrical chair of antiquity to the delivery room of the present-day hospital. Early surgery was in the hands of bathhouse keepers, fakirs and barbers. The physician of the sixteenth century, dressed in his long robes, with a cane in his hand pointed to the place where the barber should cut. Early obstetrics was solely in the hands of midwives and priests. Even as late as the middle of the seventeenth century little progress had been made in this branch of medicine. There is a prescription for relieving painful childbirth set forth in a manuscript of Dr. Endicott of Salem, the son of Governor Endicott. "For sharp and difficult travail in women with child, take a lock of virgin's hair from any part of her head, (of half the age of the woman in travail), cut it very small to fine powder, then take twelve ant's eggs dried in an oven after your bread is drawn out of the oven, and make a powder with the hair. Give this with a quarter of a pint of red cow's milk or, for want of milk, give it in strong ale wort." While this concoction had no effect except on the imagination, it was at least less

disgusting than were many of the medicaments used at that time.

There are many legends of quacks and healing cults, but the most spectacular charlatan of all ages was Cagliostro, who lived in the time of Louis XVI. He used mystery and alchemy as trappings for his cures. He sold beds that provided painless childbirth, chairs that cured rheumatism and, for those who could afford it, he supplied a very expensive tonic called "Elixir of Life." In the eighteenth century James Graham revived the miraculous beds of Cagliostro, but along another line of approach. In 1779 he opened a Temple of Health in London. Among other pieces of quackery exploited was a "Celestial Bed", the use of which, at a very high price, assured conception to the occupant. To quote from the *British Medical Journal* of 1911, "A sumptuous bed in brocaded damask, supported by four pillars of spiral shape festooned with garlands of flowers in gilded metal, renting for a fee of fifty guineas per night, was offered regardless of age to old and young, as a means of getting offspring. On whatever side one gets into the Celestial Bed, one hears an organ play in unison with three others, consisting of various airs which carry the happy couple into the arms of Morpheus. For nearly an hour while the concert lasts, one sees on the bed streams of light, which play over the pillows. When morning comes the magician comes to give them their breakfast and present their bill. He sends them away full of hopes, not forgetting to tell them to send other clients." One of Graham's assistants in the Temple of Health was Emma Lyons, afterwards Lady Hamilton, whose name is associated with that of Lord Nelson.

Among the early charlatans in America was Phineas Quimby of Maine. His importance comes not so much from his own work as from the influence he exerted later on Mary Baker Eddy. He began faith healing with the use of hypnotism, which he called "animal magnetism", somewhat a reproduction of Mesmer's fads of the eighteenth century. His method consisted of sitting beside his patient, usually a woman, putting his left hand on her bare abdomen and with the other hand rubbing her head, in the meantime telling the patient that animal magnetism flowed out of his body into hers, and that animal magnetism thus acquired would cure her. He later changed his method and taught that there is no evil; that evil exists only in the mind; that all illness resulted from evil thoughts and when these were expelled from the mind, disease disappeared. His teaching became the basis of new thought and the Eddy healing cult.

Among the legends of witchcraft we find the hex doctor. This cult originated in the New England states, but there was a recent outbreak in Lancaster, Pa. A farmer by the name of Hess lived not far from York. He suffered various misfortunes to his chickens and crops. In the neighborhood there practiced quite a few witch doctors. The Hess family consulted one of these doctors, who told them that they had been "hexed" by an elderly man named Nelson Reymeyer, and that they could deprive him of his power of casting spells upon them in two ways: by cutting off a lock of his hair and burying it eight feet under ground, or by securing a book he had in his possession called "The Long Lost Friend." The hex doctor and the two Hess boys, eighteen and fifteen, went to Reymeyer's house, where they seized him and tried to cut off a lock of his hair and get the book. The unfortunate victim put up a vigorous fight but was killed in the struggle. His assailants were brought to trial at York and found guilty of murder in the first degree, and sentenced to life imprisonment. This trial brought forward much evidence, showing how widespread was the belief in witchcraft in York and Lancaster counties. The book was purchased in the city of Lancaster on the newsstand in 1920. On the title page was written, "Whoever carries this book with him is safe from all his enemies visible and invisible, and whoever has this book can-

not die, be drowned or burned." The book contained the following remedy for hysterics, which was called "Mother's Fits": "Lay the hand over the heart and repeat a poem called Matrix Patrix." A remedy for burns and wounds was to make three crosses over the affected parts. The cure for epilepsy was to take a turtledove, cut off its head, and let the person afflicted with the disease drink the blood. For cutting teeth without pain, boil the brain of a rabbit and rub the gums. The book also tells how to prevent fires and compel thieves to restore stolen goods, also how to prevent becoming witched and how to witch others.

From Canada comes the latest contribution to faith healing—the foot twister, Mahlon Locke. It is very obvious that what Locke does is no more than what chiropractic does, much less than osteopathy does, and probably much the same thing that Emile Coue, Alexander Dowie and many of the disciples of Mary Baker Eddy have done. To quote from the American Medical Journal of 1934, "The activities of Dr. Locke are a burlesque on the scientific practice of medicine. His promotion is a violation of every traditional ethical tenet. Were not the result so lamentable, the comedy would be laughable. There are some who say that even psychologic relief for the chronic arthritis patient is worthwhile, regardless of the means by which it is accomplished. The reaction on the scientific practice of medicine and the chagrin and disappointment of those seriously sick, do not permit this laissez faire attitude. Moreover, many a person who might be benefitted by scientifically applied physical therapy and by competent orthopedic surgery is spending hard-earned money to make the long trek to Williamsburg, in search of a pot of gold which those at the end of the rainbow are quite consistently saving for themselves. If Locke's practices are right, the medical schools might as well stop teaching anatomy, physiology, pathology and diagnosis. They need have no fear. History shows that such charlatans and such systems come and go, while scientific facts and knowledge go on forever."

BIBLIOGRAPHY

Medicine of the Middle Ages—Riesman.
Stalkers of Pestilence—Wade O. Oliver.
The Medical Follies—Morris Fishbein.
Clio Medica:
I The Beginning of Egypt and Assyria—Warren R. Dawson.
II Italian Medicine—Arturo Castiglioni.
III Medicine in the British Isles—Sir D'Arcy Power.
History of Medicine—Garrison.
Microbe Hunters—Paul de Kruif.
Mystery, Magic and Medicine—Howard Haggard.
Devils, Doctors and Drugs—Howard Haggard.
Works of Hippocrates—Adams.
Religeo Medico Masquerade—Peabody.
The Great Doctors—Sigerist.
Bullfinch's Mythology.
Myths of Greece and Rome—Guerber.
Four Thousand Years of Pharmacy—La Wall.
Medicine in Virginia in the 18th Century—Blanton.
Behind the Doctor—Logan Clendening.
The Physician Through the Ages — Arthur Selyn Brown.
The Infancy of Medicine—McKenzie.
Journal of the American Medical Association.

CONTAGIOUS DISEASE

Every illness should be looked on as possibly contagious until it has been positively diagnosed as noncontagious by a competent physician, declares Beulah France, R.N., in "Home Nursing in Communicable Diseases" in the December *Hygeia*. For instance, in the earliest stages of scarlet fever before even the rash has appeared a child or an adult harboring the virulent germs may easily spread them about among susceptible persons.

Isolation, therefore, is the first step to be taken in the home care of a communicable disease. It is the precautionary measure which, if carried out early enough, may prevent the spread of infection. The room chosen for the suspected victim of a "catching" disease should be one which is light and airy and as far removed as possible from the other rooms in the house. All unnecessary furniture, hangings and bric-a-brac should be removed and all closets emptied.

Every nurse in a communicable case must look on her hands as "friendly enemies"; friendly because they make it possible for her to serve one who is afflicted; enemies because they must be carefully watched lest they spread poisonous germs. Having assumed the care of a patient with a communicable disease a home nurse must realize that her duties include actual nursing of the patient, and protection of all others against the disease.

PRESIDENT'S PAGE

At this time, marking my initial appearance on this page, I wish again to thank the members of the West Virginia State Medical Association for the high honor you have so graciously bestowed upon me. I fully realize the responsibilities I assume in taking over this office and know my limitations and my need of help from each and every member of this Association. I know, however, that I have but to ask and this help will be given without stint, even as it has been given in the past. We are pleading for your support, for such support as you have given to my worthy predecessors.

I shall endeavor to visit as many of you in your component societies as I possibly can. Perhaps I shall see most of the members of this Association before my term of office ends at the close of the year 1936. But should I not see you and should I not be able to grasp your hand and seek your personal support, I am taking this means of asking for your wholehearted assistance.

The last several years have been trying years in our own Association, as well as in other professions and other lines of business. We have weathered this storm as well, or perhaps better than the common lot; thanks to those who have guided our destinies. Firm hands, strong minds, and courageous souls they had in the hour of our dire distress. I wish to pay tribute to my immediate predecessors who have in the last five years occupied the President's chair. Particularly I wish to felicitate my immediate predecessor, Dr. R. H. Walker, for the work that he has accomplished in his year of service. Many reforms of far-reaching consequence have been achieved under his able guidance. These reforms I hope in some small measure to help consolidate during my term of office.

Perhaps from time to time as the future issues of the JOURNAL come to you, I shall have occasion to call attention to abuses which tend to weaken our beloved Association, and which need correction. In doing this, I shall to the best of my ability place the good of our Association above any private individual's good, even should that individual be my own self.

I wish for you all a very prosperous new year and for continued prosperity throughout the year 1936.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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DR. WALKER — DR. MORGAN

"My greatest hope is that when I turn the reins over to my worthy successor, Dr. Charles Morgan, I will leave the Association a little better and a little stronger than it was at the beginning of my term."

DR. R. H. WALKER

Thus did Dr. R. H. Walker, now immediate past president of the West Virginia State Medical Association, close his last message to the members of the Association as their chief executive officer in 1935. It must be said that Dr. Walker's cherished hope has been fulfilled considerably beyond the modest measure in which it was expressed.

It is doubtful if organized medicine in West Virginia can point to any other single year in its history with any greater degree of pride than that which should attend a review of the achievements of the administration which Dr. Walker so capably headed.

"There have been some victories and some defeats."

Typical of his quiet modesty, Dr. Walker thus summarized the record of his administration. Yet there is much more to be said for the 1935 Association year than the simple statement that "there have been some victories and some defeats." Then too, in the admission that "there were . . . some defeats", there is to be found that quality which made

DR. C. G. MORGAN

Dr. Walker one of the Association's outstanding executive officers.

In Dr. Charles G. Morgan the Association has an executive officer fully qualified by

temperament and ability to not only see that the gains heretofore made are retained but also to unite organized medicine in a militant program in the exploration of new fields of endeavor.

Aptly did he state his understanding of the new problems which he will face as president of the Association when, in accepting his election and acknowledging his gratitude (speaking to the convention assemblage at Wheeling) he said:

"Without your help I am sure we can do nothing; with your support we can go a long way and we will flourish like the green bay tree. For myself I pledge you the best that is possibly in me, so help me God and keep me steadfast."

To Dr. Walker we express our deep gratitude for a year of splendid achievement. To Dr. Morgan we pledge our entire support and extend our sincere good wishes for a year of prosperous success.

MATERNAL WELFARE

On other pages in this issue is the reprint of an article appearing in the *Journal of Obstetrics and Gynecology*, which sets forth the history of the organization of the American Committee on Maternal Welfare. It is to be hoped that the members will read this article carefully, for it not only gives the history of the organization of this committee, but explains fully just what the aim of the committee is, and its personnel.

On November 2, there was held at the secretary's office in Charleston, a meeting of the Committees on Maternal Welfare and Child Health. These committees were formed at the last meeting of the State Association in Wheeling and are the committees from the organized profession of the State representing West Virginia's profession on the American Committee on Maternal Welfare.

At this meeting held in Charleston it was agreed that the first thing for us to do was to try and find out just what the needs are before the committees started functioning.

In order that we might have something to guide us, the request was made of the Health Commissioner, Dr. McClue, for a list of the causes of maternal deaths in West Virginia for the latest available year.

Dr. McClue has furnished to the committees the list of deaths as follows:

	Deaths	*Rate*
Abortion with septic conditions	25	6.8
Abortion without septic conditions	3	.8
Ectopic gestation	5	1.3
Other accidents of pregnancy not including hemorrhages	1	.3
Puerperal hemorrhages	36	9.8
Puerperal septicemia	53	14.5
Puerperal albuminuria and eclampsia	55	15.0
Other toxemias of pregnancy	4	1.1
Puerperal phlegmasia alba dolen, embolus, sudden death (not specified as septic)	12	3.2
Other accidents of childbirth	2	.5
Total live births		36,464
Maternal death rate per 100,000		11.8

It is to be hoped that the members of the Association will read this list carefully and thoughtfully. If this is done, then the proposed activities of the district committees on Maternal Welfare and Child Health will be understood more thoroughly by the component societies in each district.

It is the intention of these two committees to work with the approval of and through the local societies in each of the districts.

A study of the list of deaths certainly gives us reason to pause and study carefully the needs of not only the members of the profession, but the laity as well. The committees propose to try, through the county societies and auxiliaries of the county societies, to carry on a campaign of education during the coming months. It seems to the committees that this is the particular need in the first year of these committees' activities.

It is to be hoped that the membership will give this thought and study and will join with the committees in this proposed educational activity.

J. R. B.

IS IT ETHICAL?

Some days ago the Association headquarters at Charleston was asked to secure the names of two or three qualified plastic surgeons in a large eastern city. The person who requested this information was an intelligent layman who contemplated a trip to the city above mentioned and who desired to consult with a reputable and qualified man. He explained that his family doctor had told him that considerable quackery existed in the plastic surgery field and cautioned him about falling into the hands of a charlatan.

Whereupon the Association wrote the medical society in the large eastern city and received the following reply which we quote in part: "We are very sorry that we have never considered it ethical to recommend any physician or group of physicians over others. We therefore regret that we cannot comply."

We take the position that this medical society is doing irreparable damage to the profession which it represents. It has adopted an attitude that is smug and self-satisfied; an attitude, we feel, which utterly fails to consider the plight of any patient who earnestly desires to avoid the pitfalls of quackery.

Medical societies throughout the country have campaigned for years to educate the lay public to avoid quackery, to seek competent medical advice, to depend upon the organized medical profession to provide competent service. The above mentioned society publishes its own bulletin in which it frequently backs up this viewpoint. Yet if the medical society itself will not furnish information about the qualifications of its members, where can such information be obtained. Must the lay public depend upon the doctors who advertise their prowess in the daily papers?

Perhaps the medical society in question has no adequate machinery for giving out such information to the lay public. We realize, of course, that it would be unbecoming for any medical society secretary, on his own responsibility, to recommend doctors to the public. Most of the larger societies in West Virginia use a "rotation" system when such inquiries are received. But any system, so long as it is equitable, should be satisfactory. If our metropolitan friends can not figure out something for themselves, we will be glad to tell them how we manage the problem down here in West Virginia.

To sum up, we want people to come to us for medical advice. We preach that gospel at every opportunity. We want our medical organization to be of service in every way possible, both to the physicians and to the public. We want the respect and good will of the public, which supports the medical profession. So, when Mr. John Public comes to us for reasonable information and advice, he gets it. That is why we wrote to the medical society in another large eastern city which gladly gave us the names of three of their reputable and qualified plastic surgeons, which we turned over to the gentleman who made the original request. In other words, we made a friend.

INSURANCE REPORTS

The physician in the past few years has been besieged with requests for written opinions by insurance companies as well as by individuals relative to the condition of one of the physician's patients. These requests come in various forms. In case of injuries the injured patient's physician is requested by the agent of some liability company to give a written statement of the condition found and an opinion as to the probable length of disability, forgetting the physician has no authority to give such information. Some life insurance companies seek information and may or may not suggest the fee they are willing to pay. Individuals seek a physician's written opinion, yet very readily state they have no money to pay for the physician's time, let alone for any laboratory work upon which an opinion is to be made.

Too often the physician does not realize to what use his opinion will be put and if his opinion is not based upon a sound foundation it will come back to embarrass him and discredit his profession. E. B. H.

COUNTY SOCIETY NEWS

CABELL COUNTY

With the scientific program devoted to a symposium on "Mastoiditis," the Cabell County Medical Society held its regular monthly meeting in the Prichard Hotel, Thursday, December 12.

In the course of the discussion on "Mastoiditis," the following members of the society presented papers on these phases:

"Etiology," Dr. F. O. Marple; "Pathology, Symptoms, Course and Sequela," Dr. Hallock Moore; "X-ray Findings," Dr. A. R. MacKenzie; "Diagnosis," Dr. Wes C. Thomas; and "Treatment," Dr. W. F. Beckner.

C. B. WRIGHT, *Secretary*.

FAYETTE COUNTY

Dr. V. E. Mace, Charleston, was guest speaker at the regular monthly meeting of the Fayette County Medical Society, held November 26, at the Hill Hotel, Oak Hill. Dr. Mace presented a paper on "Treatment of Pneumococcic Pneumonia."

Doctors Norman L. Cardey of Winona and H. N. Reeves, of McKendree, were elected to membership in the society.

RALPH HOGSHEAD, *Secretary*.

HARRISON COUNTY

Election of officers for the ensuing year featured the meeting of the Harrison County Medical Society held on December 5, at the Stonewall Jackson Hotel, Clarksburg.

Officers elected for 1936 were as follows:

President, Dr. R. B. Linger; vice president, Dr. J. S. Maloy; secretary, Dr. Creed C. Greer; treasurer, Dr. G. F. Evans; delegates to state convention, Dr. H. H. Haynes, Dr. C. O. Post, and Dr. B. S. Brake; alternate delegates, Dr. G. F. Evans, Dr. E. B. Wright and Dr. S. L. Cherry; member of board of censors, Dr. W. T. Gocke.

CREED C. GREER, *Secretary*.

KANAWHA COUNTY

The Kanawha County Medical Society, in its regular annual meeting on December 6, elected as its principal officers for 1936, the following:

President, Dr. Ray Kessel; vice president, Dr. A. W. Milhoan, Nitro; secretary-treasurer, Dr. P. A. Haley, II, and member of board of censors, Dr. B. H. Swint.

In addition to electing officers, the Kanawha County Society heard Dr. A. A. Wilson, Charleston, present a report on the International Neurological Congress, which he recently attended in London, and witnessed motion pictures which Dr. Wilson presented as a supplement to his report.

Dr. Charles G. Morgan, Moundsville, president-elect of the West Virginia State Medical Association, was guest of honor, and spoke briefly.

P. A. TUCKWILLER, *Secretary*.

McDOWELL COUNTY

Dr. E. E. Vermillion, Welch, was elected president of the McDowell County Medical Society for 1936 at the regular December meeting of that group. Other officers elected were: Vice president, Dr. C. F. Johnston, Welch; secretary, Dr. R. H. Edwards, Welch; and treasurer, Dr. F. E. La Prade, Welch.

R. H. EDWARDS, *Secretary*.

LOGAN COUNTY

The regular December meeting of the Logan County Medical Society was held at the Aracoma Hotel, December 11, 1935, 6:30 p. m. This was the occasion of our annual banquet. There were 24 members present. No scientific program was arranged for this meeting. The secretary-treasurer made the annual report of the society's business for the past year. Following this was the election of officers for the coming year. Dr. V. A. Deason was elected president, and Dr. D. T. Moore secretary-treasurer.

The regular November meeting was held November 13 at the Logan General Hospital. Dr. W. E. Brewer of Logan, W. Va., was the guest speaker for the evening, using as his subject "Differential Diagnosis of Acute Appendicitis."

E. H. STARCHER, *Secretary*.

MERCER COUNTY

The Mercer County Medical Society, meeting November 21, in Bluefield, heard papers by Dr. D. B. Lepper, health officer for the City of Bluefield, on "Clean Milk"; by Dr. J. E. Nelson, Bluefield dentist, on "Vincent's Infection"; and by C. L. Jefferies, Bluefield pharmacist, on "The Relation of Physician and Pharmacist."

C. T. ST. CLAIR, JR., *Secretary*.

RALEIGH COUNTY

"Leukorrhea Due to the Trichomonas Vaginalis," was the subject of a paper presented by Dr. A. P. Hudgins, Charleston, guest speaker at the regular bi-monthly meeting of the Raleigh County Medical Society, held November 21, in the Southern Methodist Church, Beckley.

Dr. Franklin H. Reeder, acting State Registrar of Vital Statistics, was a guest and spoke on the relationship between the work of his department and the maintenance of public health.

L. M. HALLORAN, *Secretary.*

OHIO COUNTY

Dr. A. V. Cadden, superintendent of Hopemont Sanitarium, was the guest speaker at the November 22 meeting of the Ohio County Medical Society. His paper was on the subject "Pulmonary Tuberculosis and the Advances in Treatment in the Past Ten Years." Doctors E. E. Clovis, Andrew Wilson and H. G. Little, led the discussion which followed.

A special meeting of the Ohio County Society was held on Sunday, December 1, for the purpose of honoring the late Dr. Robert McMillen, deceased member of the Society, who died November 29, last. As a fitting tribute to Dr. McMillen, the society adopted a resolution as prepared by a special committee named for that purpose.

The December 6 session of the Ohio County Society was devoted to business, and among items discussed was the application of the Chamber of Commerce health survey in Ohio county, the subject of immunization of school children, the changes brought about by the discontinuance of medical relief, and the broad subject of contract practice as it related to insurance systems by certain fraternal groups in the community.

Dr. James H. Mendel, Philadelphia, Pennsylvania, presented his exhibit as shown at the last meeting of the American Medical Association in Atlantic City, in presenting his lecture on the subject: "The Diagnosis of Diseases of the Ear," at the December 13 meeting of the Ohio County Society. Discussions were led by Doctors Ivan Fawcett, E. L. Jones and R. A. Thomassene.

All of the above cited meetings were held in the solarium of the Ohio Valley General Hospital, Wheeling.

W. M. SHEPPE, *Secretary.*

OBITUARY

DR. WILLIAM W. MORTON

Dr. William Wade Morton, widely known Bluefield physician, died at the home of his daughter, Mrs. C. M. Scott, early in December at the age of 83 years. Dr. Morton had been in ill health for several months and had been bedfast for six weeks before his death.

Dr. Morton was born in Fayetteville in 1853. After the Civil War he attended the University of Louisville and later furthered his education in medicine in New York. He first practiced at Montgomery, later moving to Cattletsburg, Kentucky. He located in Bluefield in 1913 and spent the longest period of his medical career there. He was the father-in-law of Dr. C. M. Scott of the St. Luke's Hospital, Bluefield.

CURRENT ANNOUNCEMENTS

Dr. Thomas D. Allen, assistant secretary of the American Board of Ophthalmology, has announced the 1936 examinations to be held at Kansas City on May 11, 1936, at the time of the A. M. A. meeting, and at New York City in October. All applications and case reports must be filed at least 60 days before date of examination. Full information may be obtained by writing Dr. Allen, 122 South Michigan Avenue, Chicago.

The American Association for the Study of Goiter again offers the Van Meter prize award of $300 and two honorable mentions for the best essays submitted on the goiter problem prior to the next annual meeting of the society in Chicago on June 8, 9 and 10, 1936. Competing manuscripts should not exceed 3000 words, should be typewritten and double-spaced and sent to the corresponding secretary, Dr. W. Blair Mosser, 133 Biddle Street, Kane, Pennsylvania, not later than March 1, 1936.

EARLY CANCER DIAGNOSIS

The only hope for a cancer patient is that the disease shall be recognized at the earliest possible moment, according to Dr. David Riesman, in "What You Should Know About Cancer" in the December *Hygeia.* The author gives several fundamental facts to be borne in mind.

The discovery of symptoms justifies a man or woman in going at once to a doctor for examination. There is, however, no need of being panicky.

THE AMERICAN COMMITTEE ON MATERNAL WELFARE*

Its Organization, Purposes and Activities

Evidence of nation-wide interest in child welfare was shown by the formation in 1909 of the Association for the Study and Prevention of Infant Mortality. Although individual physicians were carrying on prenatal care in their obstetric practices, and various medical and health organizations had developed local agencies for the promotion of maternal and child welfare, interest of national scope was not in evidence until 1919. At the tenth annual meeting of the American Child Health Association in November, 1919, a resolution was adopted which led to the formation of the Joint Committee on Maternal Welfare. The American Child Health Association thus sanctioned the appointment of a committee and requested the American Gynecological Society and the American Association of Obstetricians, Gynecologists and Abdominal Surgeons each to appoint a similar committee to confer with it regarding the elaboration and development of a maternal and child welfare program in the United States.

The following year the American Gynecological Society authorized the appointment of the committee in accordance with this resolution. A collaborative committee was also appointed from the American Pediatric Society. The original committee consisted of Dr. J. Whitridge Williams, Dr. Anna E. Rude, and Dr. Merrill E. Champion representing the American Child Health Association, and Dr. Geo. W. Kosmak, Dr. Fred J. Taussig, and Dr. Fred L. Adair representing the American Gynecological Society. Later, three members, representing the American Pediatric Society, were added to this committee: Dr. Henry L. L. Shaw, Dr. Fritz Talbot, and Dr. Walter Ramsey.

There was added to this committee, in 1921, a similar one from the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons. The personnel of this committee consisted of Dr. George Clark Mosher, Dr. Henry Schwarz, and Dr. George W. Kosmak. The Joint Committee worked out a tentative program of maternal welfare, which has been approved by the component societies. The Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association appointed a subcommittee to represent this Section on the Joint Committee in 1927.

The original Joint Committee recognized, in developing the plan for maternal welfare: first, the paramount importance of safeguarding the life and health of the mother, especially by decreasing in number the infections following abortion and childbirth, and by the control of the toxemias; second, the desirability of an increase in the number of fruitful pregnancies by decreasing the incidence of sterility, by reducing the number of abortions and premature births, and by attempting the prevention of stillbirths; third, the urgent need of more and better maternal care during the prenatal, natal and postnatal periods; and fourth, that concrete results in the improvement of conditions surrounding maternity and early infancy must depend largely on general application of existing knowledge and on further investigation of the many problems which contribute to morbidity and mortality of both mothers and infants.

The Committee decided that its functions were: first, the elaboration of a complete, practical scheme embodying the ideals of maternal welfare; second, the correlation of maternal welfare with other health and welfare activities, especially infant and child welfare; third, the cooperation with governmental and state agencies on the problem of maternal welfare; and fourth, close cooperation with the pediatricians in working out those problems in which infant, child, and maternal welfare were closely associated.

Among its activities in the furtherance of these functions the Committee endeavored early to contact through their secretaries all the medical societies in the United States. This was done through a circular letter suggesting the inclusion in their programs and clinics of more obstetric and pediatric subjects. Contact has been made with lay and governmental agencies to assist in the education of the public to the needs of maternal and infant care. This has been done through lectures, pamphlets, articles in the lay press and radio broadcast.

The Committee has sponsored the publication of pamphlets for physicians on *Standards of Prenatal Care and Standards of Intranatal or Delivery Care.* The former has been shortened and revised and the

*Prepared by Drs. R. D. Mussey, R. L. DeNormandie, and F. L. Adair. Reprinted from the American Journal of Obstetrics and Gynecology. May, 1935.

Standards of Postnatal Care is prepared and soon to be published.

The members of the Committee actively participated in the work of the White House Conference on Child Health and Protection during its existence. Some participated actively in planning and editing the study by the Federal Children's Bureau, of the pamphlet entitled: *Maternal Mortality in Fifteen States.*

The Committee has carefully defined febrile maternal morbidity as follows in its furtherance of setting up of standards of investigation: A fever of 100.4° F. (38° C.) on any two of the first ten days postpartum, exclusive of the first twenty-four hours. The temperature should be taken by mouth by the standard technique at least four times daily.

The committees from each society functioned more or less independently, but in cooperation with the Joint Committee. It was moved, at a meeting held on June 14, 1933, that steps be taken to enlarge the Joint Committee on Maternal Welfare by inviting the Pacific Coast Society of Obstetrics and Gynecology and the Central Association of Obstetricians and Gynecologists to appoint one member each to act on the Committee.

Formal plans for incorporating were laid and a Board of Directors was appointed at the following meeting on October 8, 1933. It was decided also to invite the Southern Medical Association, the New England Obstetrical and Gynecological Society, and the Southeastern Obstetrical Assembly to select a member to represent them on the Joint Committee on Maternal Welfare.

It was thought best to alter the name of this committee because of the confusion which arose from the selection of a similar name by an organization in New York City with an entirely different purpose, namely the Joint Committee for Maternal Health. Our committee became incorporated in Illinois under the name of The American Committee on Maternal Welfare, Inc., on April 16, 1934. The purpose or object as stated in the by-laws is as follows:

The object for which this corporation is formed is to awaken and stimulate the interest of members of the medical profession in cooperating with public and private agencies for the protection of the health of mothers and their offspring before and during pregnancy and labor, and after confinement, to the end that the conditions which menace and interfere with the health or life of the mother or the infant may be improved or prevented, and disease and disorder corrected and prevented, health promoted and life saved; to teach the principles and practices of general and personal hygiene and health to parents; to improve and generalize the standards and methods of training physicians, nurses and others dealing with problems of maternity; to study and promote the study of the problems involved in achieving the foregoing objects; to publish and circulate publications of any kind and description; to receive donations, and to purchase or acquire, receive, take hold and manage such real and personal property by gift, grant, devise or bequest as may be necessary, useful or desirable for the purposes and objects of the corporation above set forth.

The present membership consists of representatives selected from and by the following organizations: American Child Health Association: Dr. Robert L. DeNormandie, Dr. Fred L. Adair, and Dr. James R. McCord. American Gynecological Society: Dr. E. D. Plass and Dr. Philip Williams. American Association of Obstetricians, Gynecologists and Abdominal Surgeons: Dr. L. A. Calkins, Dr. Arthur J. Skeel, and Dr. F. H. Falls. Section on Obstetrics and Gynecology—A. M. A.: Dr. Fred L. Adair, Dr. R. W. Holmes, and Dr. R. D. Mussey. American College of Surgeons: Dr. Geo. W. Kosmak. Central Association of Obstetricians and Gynecologists: Dr. James R. Reinberger. New England Obstetrical and Gynecological Society: Dr. Charles E. Mongan. The American Public Health Association: Dr. Thomas Parran, Jr. Maternity Center Association of New York: Miss Hazel Corbin. Southern Medical Association: Dr. Calvin R. Hannah. Pacific Coast Society of Obstetrics and Gynecology: Dr. Frank W. Lynch.

To these have been added by formal action: the Chicago Maternity Center, the Canadian Medical Association, and the Federal Children's Bureau of the United States Department of Labor.

The following officers were elected at the first meeting of the Board of Directors held on May 22, 1934: Dr. Fred L. Adair, chairman; Dr. George W. Kosmak, vice chairman; Dr. James R. McCord, secretary; and Dr. Frederick H. Falls, treasurer. Dr. Robert L. DeNormandie and Dr. LeRoy A. Calkins were designated as members of the Executive Committee, together with the chairman, vice chairman and secretary.

The formation of State Committees on Maternal Welfare is now in progress under one of two plans of procedure: First, that some man or men may bring the matter before the State Medical Society

and have them form a State Committee, which in turn would sponsor the formation of similar local committees in each of the county societies. A maternal welfare program would in this way become an official part of the activities of the various state and component county medical societies. The other plan would be for the American Committee to appoint members in a given state to serve on a local committee which would attempt to further the development of a maternal welfare program in their own state through the various local organizations under medical leadership.

The Committee believes the welfare of the infant and child is dependent largely on the welfare of the mother and that on both rests the welfare of the community. This Committee is interested in promoting such welfare by furthering the practice of safe and sane obstetrics and by stressing the importance of improved antepartum, intrapartum, postpartum and postnatal care in the interest of the mother and her offspring and the community. This end can only be obtained by the continued and increased leadership, cooperation and interest of medical men in better obstetrics. The effect of the application of teamwork in the fight against morbidity and mortality is evident in the decidedly lowered death rate in tuberculosis and many of the diseases of childhood which has resulted from campaigns led by medical men in cooperation with other agents and agencies.

Much remains to be done in the general application of our present knowledge in the prevention of those conditions which contribute to the loss of health and life in the mother. So far as the fetus is concerned, the Committee is interested in the prevention of fetal deaths, whether they occur early or late in pregnancy, as well as of those infant deaths resulting from causes arising during gestation and parturition and from preventable conditions such as infection arising in neonatal life. Its main purpose is to stimulate and aid medical men to develop and make available complete and adequate maternal care for all mothers of our country.

THE FAIRMONT MEETING

The next annual meeting of the Association, which is to be held in Fairmont, is scheduled for June 8, 9 and 10, 1936. Headquarters will be established at the Fairmont Hotel where all of the general and sectional meetings will be held. All sectional meetings will be held on Monday, June 8, and the general sessions will be held on Tuesday and Wednesday, June 9 and 10. The convention will close with the annual banquet and ball on the evening of June 10.

The Woman's Auxiliary, which will meet in Fairmont with the Association, will establish headquarters in the Red Cross building which is directly across the street from the Fairmont Hotel.

The Association's Scientific Committee, headed by Dr. Ivan Fawcett of Wheeling, has already completed the tentative program for the Fairmont meeting and a splendid scientific program is assured. The final meeting of the Scientific Committee will probably be held about the middle of January and all program inquiries should be addressed to Dr. Fawcett prior to that time.

MEETING OF COUNCIL

The annual year-end meeting of the Association Council was held in Charleston on December 12, 1935 with Dr. Roy Ben Miller, chairman, presiding. Those present were Drs. Miller, R. H. Walker, president; T. M. Barber, treasurer; G. R. Maxwell, C. G. Morgan, president-elect; Ray M. Bobbitt, W. G. Harper, D. A. MacGregor, Robert J. Reed, Jr., G. A. Smith, G. G. Irwin, F. E. Brammer, R. J. Wilkinson, Ralph Hogshead, Mr. Ben Moore and E. S. Bock, Association attorneys, and Mr. Joe W. Savage, executive secretary.

Following the reading and approval of the minutes of the last meeting, the report of the executive secretary was heard, followed by the reports of the district councillors on their respective districts. Dr. Harper reported that the matter of a separate charter for the proposed Barbour County Medical Society had been cleared up and that all the petitioners had been inducted into membership in the Barbour-Randolph-Tucker County Medical Society.

Dr. Irwin reported upon the petition received by Council from a number of doctors in Beckley protesting against list hospital practice within the city. He stated that he had made one trip to Beckley and had the assurance of one of the Beckley hospitals that it would give up its city hospital list work if the other hospital would do likewise. Dr. Irwin was requested to again present this matter to the Raleigh County Medical Society and urge them to either remedy the complaint or report that they were unable to do so. It was felt that this matter could and should be settled by the Raleigh Society.

Senator Albert Matthews, Workmans' Compen-

sation Commissioner of West Virginia, appeared before the Council and requested the appointment of a special advisory committee to confer with his department on all disputed medical claims and all other matters concerning the medical policy of the commission. On motion of Dr. Irwin, the president was authorized to appoint such a committee.

The matter of the corporate practice of medicine by industrial corporations was brought before the Council and Mr. Moore was introduced and spoke briefly on various legal procedures by which such practice could be stopped. After considerable discussion, the Council voted unanimously to enter suit against a picked industrial corporation in order to get this matter before the courts.

Dr. Walker reported upon the present status of affairs at the University school of medicine at Morgantown, which report was accepted. No action was taken in this regard, as the Association had already gone on record at the Wheeling meeting relative to the school of medicine.

The Council elected Dr. M. L. Dillon of Charleston and Dr. Mary J. Fortney of Hundred to honorary life membership in the Association.

Dr. Bobbitt introduced a resolution authorizing the appointment by the president of a Committee on Insurance to study and make recommendations on all medical and hospital insurance plans now in operation within the state. The committee was empowered to approve or disapprove any plans submitted for study, basing approval upon adherence to the principles set down by the House of Delegates of the American Medical Association.

The question of reciprocity with other states was discussed at some length, different members pointing out the advantages and disadvantages that would follow the elimination of reciprocity with all other states. No action was taken, but it was agreed that this matter would be brought up for further consideration at the Fairmont meeting.

Dr. Maxwell reported that the Monongalia County Medical Society had adopted an amendment to its by-laws calling for the suspension of all members who failed to attend at least three meetings of the Society during each calendar year. He asked for the Council's opinion relative to the legality of this by-law. The Council felt that this was a matter entirely proper and within the province of any county society and, upon motion of Dr. Irwin, so recorded itself.

Speaking for the Council, Dr. Irwin called attention to the fine and loyal service that had been rendered the Association by Dr. MacGregor, whose term on the Council expired with the December 12 meeting. Dr. Irwin expressed the regret of Council in losing the services of so valuable a member. Dr. MacGregor replied briefly and thanked the members of Council for their help and cooperation during his term as president and as Council chairman.

The Council meeting adjourned at 3:12 o'clock p. m.

WOMAN'S AUXILIARY

KANAWHA COUNTY

The Auxiliary to the Kanawha Medical Society met at the Daniel Boone Hotel on December 3, 1935. Representatives of all civic organizations in Charleston were invited to attend this meeting. Approximately 150 members and guests were present.

Dr. Randolph Anderson gave an illustrated lecture on "Posture." Mrs. John W. Moore, president of the Auxiliary, spoke to the group on the purpose of the Auxiliary, it's usefulness and aims.

Mrs. V. T. Churchman, Jr., *Secretary*.

HARRISON COUNTY

The Harrison County Medical Society Auxiliary met at the Dolly Madison Tea Room on December 5, with Mrs. E. B. Wright, president, presiding. Sixteen members were present.

Mrs. W. W. Spelsberg led a general discussion and review of *Hygeia*. Following the usual business session adjournment was called until January 2, at which time the Auxiliary will meet at the Stonewall Jackson Hotel, Clarksburg.

Mrs. H. H. Esker, *Secretary*.

PARKERSBURG ACADEMY

The Auxiliary to the Parkersburg Academy of Medicine met at the Southern Tea Room, Parkersburg, on November 12. Mrs. R. H. Wharton, president, presided over the nineteen members who were present.

Mrs. O. D. Barker spoke to the group on "The Fallacies of Health Insurance Theories." This subject was received with much interest and followed by a general discussion.

During the business session plans were made for placing *Hygeia* in the schools of Parkersburg.

It was decided to hold the December meeting at the home of Mrs. E. C. Hartman.

Mrs. A. Morgan Dearman, *Secretary*.

LOGAN COUNTY

The Auxiliary to the Logan County Medical Society met on November 5, 1935, at Logan, W. Va. Mrs. Harold Vanhoose presided over the meeting. Twelve members were present.

Mrs. J. W. Carney spoke on the subject of "Public Relations". This was followed by a general discussion.

During the business session the Auxiliary was notified that they were to serve at a tea to be given by the American Friends Society in December.

Luncheon was served to the Auxiliary by the Holy Trinity Guild.

The next meeting of the Logan Auxiliary will be on January 7, 1936 at the Episcopal Parish House. MRS. V. A. DEASON, *Secretary*.

ACTIVE AND HONORARY MEMBERSHIP

WEST VIRGINIA STATE MEDICAL ASSOCIATION

(Editor's Note—Below will be found the names of all active and honorary members in good standing in their respective county societies. The star (*) appearing before a name indicates honorary membership. From this type will be published the annual Association directory of members. Will each member please check his own name and address and notify the JOURNAL at once if any error has been made.)

Barbour-Randolph-Tucker

H. H. Bolton, Pierce
D. T. Bond, Norton
A. P. Butt, Elkins
A. P. Butt, Jr., Elkins
R. J. Condry, Elkins
J. E. Daugherty, Elkins
A. M. Fredlock, Elkins
B. I. Golden, Elkins
R. P. Good, Galloway
T. M. Goodwin, Elkins
C. H. Hall, Elkins
E. M. Hamilton, Belington
W. G. Harper, Elkins
F. S. Holsberry, Parsons
W. M. Junkin, Elkins
W. W. Kerr, Volga
L. S. King, Philippi
B. L. Liggett, Mill Creek
G. H. Michael, Belington
J. H. Miller, Thomas
J. L. Miller, Thomas
W. L. Miller, Bemis
S. G. Moore, Elkins
E. G. Myers, Philippi
H. C. Myers, Philippi
K. J. Myers, Philippi
S. J. Skar, Davis
W. S. Smith, Philippi
C. G. Stroud, Brownton
S. Weisman, Parsons
C. B. Williams, Philippi
W. E. Whiteside, Parsons
J. R. Woodford, Philippi
R. S. Wolfe, Elkins
T. L. Woodford, Junior
*J. L. Bosworth, Mill Creek
*J. W. Bosworth, Philippi
*H. K. Owens, Elkins
*O. L. Perry, Elkins
*A. H. Woodford, Belington

Brooke Society

L. J. Bernstein, Wellsburg
W. T. Booher, Wellsburg
F. T. Dare, Wellsburg
H. L. Hegner, Wellsburg
Leo Huth, Follansbee
F. L. Matson, Wellsburg
J. A. McCurdy, Warwood
Ralph McGraw, Follansbee
J. P. McMullen, Wellsburg
C. R. Megahan, Follansbee
R. C. Otte, Wellsburg
E. N. Pell, Wheeling
*B. F. Harden, Wellsburg

Cabell Society

J. H. Baber, Huntington
H. E. Beard, Huntington
W. F. Bruns, Ceredo
O. B. Biern, Huntington
J. R. Bloss, Huntington
R. M. Bobbitt, Huntington
W. D. Bourn, Barboursville
B. F. Brown, Huntington
F. A. Brown, Huntington
J. R. Brown, Huntington
W. F. Bruns, Ceredo
V. L. Chambers, Huntington
Leo Christian, Huntington
A. W. Crews, Huntington
D. J. Cronin, Huntington
R. H. Curry, Barboursville
C. S. Duncan, Huntington
R. B. Easley, Huntington
F. F. Farnsworth, Milton
J. W. Ferguson, Kenova
C. P. S. Ford, Huntington
B. D. Garrett, Kenova
E. B. Gerlach, Huntington
T. N. Goff, Kenova
W. O. Grimm, Huntington
J. A. Guthrie, Huntington
O. L. Hamilton, Huntington
J. C. Hardman, Huntington
Richard Hardwick, Huntington
I. R. Harwood, Huntington
C. M. Hawes, Huntington
Douglas Hayman, Huntington
J. S. Hayman, Huntington
L. S. Henley, Huntington
W. D. Hereford, Huntington
I. C. Hicks, Huntington
I. I. Hirschman, Huntington
F. C. Hodges, Huntington
F. J. Hoitash, Huntington
J. E. Hubbard, Huntington
E. J. Humphrey, Huntington
W. B. Hunter, Huntington
G. D. Johnson, Huntington
A. S. Jones, Huntington
A. T. Jordon, Winfield
W. C. Kappes, Huntington
J. R. Keesee, Huntington
A. D. Kessler, Huntington
A. K. Kessler, Huntington
J. C. Kessler, Hamlin
J. S. Klumpp, Huntington
W. M. Lewis, Huntington
H. V. Lusher, Huntington
A. R. Lutz, Huntington
G. M. Lyon, Huntington
A. R. MacKenzie, Huntington
F. O. Marple, Huntington
H. B. Martin, Huntington
J. C. Matthews, Huntington
W. E. Matthews, Huntington
M. B. Moore, Huntington
Hallock Moore, Huntington
T. W. Moore, Huntington
W. E. Neal, Huntington
W. J. Parsons, Huntington
Bruce Pollock, Pt. Pleasant
K. C. Prichard, Huntington
G. A. Ratcliff, Huntington
E. F. Reaser, Huntington
C. O. Reynolds, Huntington
O. E. Reynolds, Huntington
L. C. Richmond, Milton
J. W. Rife, Kenova
J. H. Robinson, Huntington
E. E. Rose, Huntington
W. N. Rowley, Huntington
F. X. Schuller, Huntington
F. A. Scott, Huntington
E. E. Shafer, Huntington
R. M. Sloan, Huntington
J. H. Steenbergen, Huntington
W. W. Strange, Huntington
W. C. Swann, Huntington
C. T. Taylor, Huntington
I. W. Taylor, Huntington
J. B. Taylor, Huntington
W. C. Thomas, Huntington
R. S. Van Meter, Huntington
W. E. Vest, Huntington
G. W. Walden, West Hamlin
R. J. Wilkinson, Huntington
C. A. Willis, Huntington
C. G. Willis, Huntington
C. B. Wright, Huntington
R. M. Wylie, Huntington

Central W. Va. Society

S. P. Allen, Webster Springs
A. B. Bowyer, Buckhannon
E. S. Brown, Summersville
F. H. Brown, Summersville
H. S. Brown, Sutton
J. D. Brown, Wendel
C. C. Carson, Gassaway
J. M. Cofer, Bergoo
L. W. Deeds, Buckhannon
J. B. Dodrill, Webster Springs
Hugh Dunn, Richwood
O. O. Eakle, Sutton
W. E. Echols, Richwood
G. D. Hill, Tioga
L. O. Hill, Camden-on-Gauley
E. H. Hunter, Webster Springs
James McClung, Richwood
M. T. Morrison, Sutton
B. L. Page, Buckhannon
L. W. Page, Buckhannon
*Fleming Howell, Buckhannon
*J. L. Pifer, Buckhannon
*Everett Walker, Adrian

Doddridge Society

A. M. McGovern, West Union
A. Poole, West Union
E. T. Wetzel, West Union

Eastern Panhandle Society

A. O. Albin, Charles Town
A. W. Armentrout, Martinsburg
E. H. Bitner, Martinsburg
Edwin Cameron, Martinsburg
R. E. Clapham, Martinsburg
A. B. Eagle, Martinsburg
L. W. Frame, Harpers Ferry
J. K. Guthrie, Martinsburg
N. B. Hendrix, Martinsburg
C. C. Johnson, Harpers Ferry
G. O. Martin, Martinsburg
Elizabeth McFetridge, Shepherdstown
G. P. Morison, Charles Town
T. K. Oates, Martinsburg
F. M. Phillips, Charles Town
M. H. Porterfield, Martinsburg
C. G. Power, Martinsburg
R. K. Shirley, Hedgesville
G. J. E. Sponseller, Martinsburg
R. B. Talbott, Martinsburg
W. A. Wallace, Martinsburg
Halvard Wagner, Shepherdstown

Fayette Society

A. E. Bays, Longacre
F. W. Bilger, Maybeury
W. P. Bittinger, Summerlee
B. F. Brugh, Montgomery
W. E. Bundy, Minden
N. L. Cardey, Winona
G. O. Crank, Lawton
Gilbert Daniel, Gauley Bridge
T. B. Daugherty, Fayetteville
George Fordham, Powellton
Claude Frazier, Montgomery
F. S. Harkleroad, Harvey
L. R. Harless, Gauley Bridge
L. I. Hoke, Layland
A. L. Hunter, Pax
G. G. Hodges, Kilsythe
Ralph Hogshead, Montgomery
C. C. Jackson, East Rainelle
J. C. Jett, Springdale
R. D. Ketchum, Longacre
W. R. Laird, Montgomery
H. C. Martin, Rainelle
M. A. Moore, Kingston
R. S. Peck, Cannelton
S. W. Price, Scarbro
P. E. Prillaman, Oak Hill
M. F. Raine, Fayetteville
J. N. Reeves, McKendree
W. D. Simmons, Glen Ferris
H. C. Skaggs, Montgomery
G. A. Smith, Montgomery
J. M. Spinks, Mt. Hope
C. W. Stallard, Montgomery
E. B. Thompson, Montgomery
H. F. Troutman, Page
R. A. Updike, Montgomery
W. V. Wilkerson, Highcoal
*O. J. Henderson, Montgomery
*J. S. Shaffer, Montgomery
*D. W. Shirkey, Montgomery
*H. A. Walkup, Mount Hope

G. H. H. M. Society

P. E. Berry, Jr., Piedmont
Robert Bess, Piedmont
Thomas Bess, Keyser
O. V. Brooks, Moorefield
E. A. Courrier, Keyser
P. D. Crynock, Elk Garden
W. G. Drinkwater, Gormania
V. L. Dyer, Petersburg
J. F. Easton, Romney
A. K. Fidler, Elkins
W. A. Flick, Keyser
T. C. Giffin, Keyser
G. S. Gochenour, Moorefield
J. B. Grove, Petersburg
W. T. Highberger, Maysville
I. B. Johnson, Bayard
S. B. Johnson, Franklin
R. W. Love, Moorefield
M. H. Maxwell, Keyser
Glenn Moomau, Petersburg
B. F. Moyers, Matthias
J. A. Moyers, Franklin
J. N. Reeves, Piedmont
Raymond Reeves, Piedmont
H. W. Rollings, Wardinsville
R. R. Sisson, Blaine
P. R. Wilson, Piedmont
J. H. Wolverton, Piedmont
M. F. Wright, Burlington
*F. L. Baker, Burlington

Greenbrier Valley Society

O. P. Argabrite, Alderson
R. E. Baer, White Sulphur Springs
R. C. Cecil, Rainelle
J. W. Compton, Ronceverte
J. R. Crawley, Anjean
H. B. Damron, Elizabethton, Tenn.
J. W. De Vebre, Ronceverte
A. D. Ferrell, Ronceverte
T. L. Gilchrist, Pickaway
H. L. Goodman, Ronceverte
B. C. Grigsby, Quinwood
H. D. Gunning, Ronceverte
J. E. Hamner, Rainelle
K. J. Hamrick, Marlinton
Guy Hinsdale, White Sulphur Springs
E. W. Hoylman, Dorr
G. F. Hull, Durbin
E. G. Kesler, Williamsburg
H. L. Kirkpatrick, Marfrance
A. G. Lanham, Ronceverte
J. G. Leech, Quinwood
C. W. Lemon, Lewisburg
C. F. Mahood, Alderson
S. A. McFerrin, Renick
W. E. Myles, White Sulphur Springs
D. G. Preston, Lewisburg
N. R. Price, Marlinton
F. H. Randall, White Sulphur Springs
J. R. Richardson, Union
H. C. Solter, Marlinton
L. B. Todd, Quinwood
Edda Von Bose, Alderson
C. I. Wall, Rainelle
*W. P. Fawcett, Alderson

Hancock Society

R. W. Alvis, Newell
G. L. Beaumont, New Cumberland
M. Bogarad, Weirton
T. E. Cato, New Cumberland
G. H. Davis, Weirton
J. E. Fisher, New Cumberland
I. Levendorf, Weirton
A. E. McClue, Charleston
M. H. Powers, Weirton
J. E. Richmond, Weirton
George Rigas, Weirton
A. B. Rinehart, Weirton
L. O. Schwartz, Weirton
C. A. Shafer, Chester
L. A. Whitaker, Weirton
Milton Wolpert, Chester
Anthony Yurko, Weirton

Harrison Society

B. S. Brake, Clarksburg
J. T. Brennan, Clarksburg
J. R. Cardey, Clarksburg
F. C. Chandler, Bridgeport
S. L. Cherry, Clarksburg
R. S. Coffindaffer, Shinnston
I. D. Cole, Clarksburg
Edward Davis, Salem
W. M. Davis, Bridgeport
H. H. Esker, Clarksburg
G. F. Evans, Clarksburg
C. F. Fisher, Clarksburg
Earl N. Flowers, Clarksburg
Thomas Gocke, Clarksburg
W. T. Gocke, Clarksburg
L. C. Goff, Clarksburg
C. C. Greer, Clarksburg
T. G. Harris, West Milford
H. H. Haynes, Clarksburg
R. C. Hood, Washington, D. C.
Kenna Jackson, Clarksburg
C. C. Jarvis, Clarksburg
J. R. Johnson, Shinnston
A. O. Kelley, Wallace
A. J. Kemper, Lost Creek
O. W. Ladwig, Wilsonburg
F. V. Langfitt, Clarksburg
F. W. Light, Clarksburg
R. B. Linger, Clarksburg
R. V. Lynch, Meadowbrook
J. S. Maloy, Shinnston
P. McGuire, Clarksburg
R. B. Nutter, Enterprise
R. J. Nutter, Clarksburg
C. R. Ogden, Clarksburg
R. L. Osborn, Clarksburg
W. T. Owens, Clarksburg
J. E. Page, Clarksburg
E. Pendleton, Clarksburg
A. T. Post, Clarksburg
C. O. Post, Clarksburg
S. H. Post, Volga
James Ralston, Clarksburg
James Repass, Lumberport
W. H. Riheldaffer, Lost Creek
R. M. Riley, Nutter Fort
H. A. Rosenthal, Clarksburg

Sylvia Saurborne, Clarksburg
C. N. Slater, Clarksburg
H. E. Sloan, Clarksburg
W. W. Spelsburg, Clarksburg
J. E. Stephenson, Clarksburg
W. L. Strother, Salem
E. D. Tucker, Nutter Fort
E. F. Wehner, Clarksburg
H. A. Whisler, Clarksburg
B. W. Wilkinson, Clarksburg
J. F. Williams, Clarksburg
E. A. Wilson, Salem
J. E. Wilson, Clarksburg
E. S. Wornal, Shinnston
E. B. Wright, Clarksburg
*A. O. Flowers, Clarksburg
*E. Newton Flowers, Clarksburg
*John Folk, Bridgeport
*William Gaston, Clarksburg
*E. A. Hill, Clarksburg
*T. M. Hood, Clarksburg
*D. C. Louchery, Clarksburg

Kanawha Society

A. E. Amick, Charleston
A. L. Amick, Charleston
Maury Anderson, Dunbar
R. L. Anderson, Charleston
H. W. Angell, Charleston
O. L. Aultz, Charleston
H. A. Bailey, Charleston
H. E. Baldock, Charleston
J. Bankhead Banks, Charleston
D. N. Barber, Charleston
T. M. Barber, Charleston
W. L. Barbour, Whitesville
G. H. Barksdale, Charleston
S. L. Bivens, Charleston
W. P. Black, Charleston
O. H. Bobbitt, Charleston
M. L. Bonar, Charleston
R. J. Brown, Charleston
I. E. Buff, Charleston
R. K. Buford, Charleston
E. H. Campbell, Carbon
J. E. Cannaday, Charleston
G. B. Capito, Charleston
H. A. Carney, Van
T. J. Casto, Charleston
Preston Champe, Charleston
V. T. Churchman, Charleston
V. T. Churchman, Jr., Charleston
F. A. Clark, Charleston
W. L. Cooke, Charleston
C. E. Copeland, Charleston
E. A. Davis, Charleston
D. A. Dent, Charleston
J. W. Duff, Charleston
M. S. Duling, Charleston
J. L. Dunlap, Bancroft
R. H. Dunn, South Charleston
C. A. Easeley, Belle
F. L. Erwin, Burnwell
H. M. Escue, St. Albans
C. M. Fleshman, Clendenin
R. I. Frame, Sharples
J. W. Frazier, Charleston
McLeod Gillies, Charleston
A. J. Given, Rensford
H. R. Glass, Charleston
W. J. Glass, Sissonsville
A. E. Glover, Van
Fred Gott, Charleston
G. F. Grisinger, Charleston
P. A. Haley, II, Charleston
R. O. Halloran, Charleston
R. E. Hamrick, Charleston
R. S. Hamrick, St. Albans
J. H. Hansford, Pratt
W. F. Harless, Madison
O. M. Harper, Swandale
E. R. Hays, Chelyan
E. B. Henson, Charleston
D. H. Hill, Charleston
W. E. Hoffman, Charleston
V. E. Holcombe, Charleston
Joseph Horwitz, Kayford
H. H. Howell, Madison
A. P. Hudgins, Charleston
W. R. Hughey, Charleston
J. Ross Hunter, Charleston
R. L. Hunter, Madison
T. H. Hutchinson, Olcott
R. A. Ireland, Charleston
G. G. Irwin, Charleston
L. A. Jarrett, Dunbar
E. V. Jordan, Charleston
Ray Kessel, Charleston
Russel Kessel, Charleston
H. D. Law, Charleston
C. E. Lewis, Nellis
J. P. Lilly, Charleston
E. A. Litzinger, Charleston
R. R. Louft, Charleston
V. E. Mace, Charleston
C. B. Marshall, Nitro
U. G. McClure, Charleston
W. A. McMillan, Charleston
W. O. McMillan, Charleston
H. D. McPherson, Eskdale
M. I. Mendeloff, Charleston
A. W. Milhoan, Nitro
J. W. Moore, Charleston
L. H. Mynes, Charleston
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THE WEST VIRGINIA MEDICAL JOURNAL

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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Huntington, W. Va.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII FEBRUARY, 1936 No. 2

THE ESTIMATION OF DISABILITY AFTER INJURY*

From an Orthopedic Standpoint

By WALTER G. STERN, M. D., F. A. C. S.
Cleveland, Ohio

WITH the advent of the "New Deal" and various social security acts, with which the industrial compensation and accident insurance will be linked more closely than ever, comes the necessity of being able to estimate accurately the actual disabilities of those who will appear before the ever-increasing number of compensating and disbursing boards for relief. To be successful, all these systems must in final analyses be actuarial successes and to reach this goal false claims must at all times be weeded out with the same zeal as all just claims must be paid in full.

All these systems must depend upon physicians for expert opinions concerning the nature of the disabilities, the probable length of the temporary (partial or total) disability and the percentage of loss of function when permanent disability results. Finally the question of rehabilitation of many of these injured employees, the retraining them for new jobs when the nature of their disability has unfitted them to return to their old employments, is becoming more and more an active issue in many states and here again the physician is called upon to act in an advisory capacity, or to help solve some of the medico-legal and sociological problems involved.

In recent years orthopedic surgeons have paid particular attention to the deformities arising after injury and are particularly fitted to estimate the physical disabilities remaining after proper treatment has done its best to correct them. But this work is not limited to any one specialty or type of surgeon. In this great mechanical era every physician is confronted with these so-called industrial medical problems, whether it be in the care of his rich patient's laundress who has caught her hand in the electric washer or in the care of all the trauma cases from a certain industry, each physician has to meet these questions.

One of the most vexing problems presented by the various compensation laws is the estimation of percentage of disability when permanent, irreparable damage has been done to a patient by an industrial injury. While in the majority of states the physician caring for the injured party is called upon to give this estimation of disabil-

*Read before the W. Va. Society of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

ity to the Industrial Commissioners, these commissioners will usually have physicians attached to the Board to act as consultants and to review the findings of the attending physician. The final per cent of disability allowed is in the commissioners' hands. Our purpose, therefore, must be to set up a standard, whereby physicians can be more uniform in their opinions concerning the percentage of disability resulting from a given type of deformity or loss of function.

Practically all industrial commissions have adopted fixed schedules of percentage of loss for a certain number of fixed disabilities, usually amputations of various members of the body. For example, in most states the loss of the arm at the shoulder by dismemberment has been fixed as the basis for estimating these schedules. The loss of the whole arm is given as a 100 per cent loss of the arm or from 29 per cent (N. M.) to 56 per cent (Iowa) of a permanent total disability. Permanent total disability is equal to 100 per cent and is given to a man so disabled that he is totally unfit for future industrial gainful occupation. The schedules of percentages of loss for other amputations have been developed from this basis.

Since we have no other standard from which to develop a common denominator, the percentage of loss of a part as compared with the total loss must likewise furnish the basis for estimating the partial loss of function in the given member.

The International Association of Industrial Accident Boards and Commissioners has for a number of years studied and promoted studies of standardization of methods and procedures, especially in the estimation of percentage of disability the result of accident. In 1923 a committee appointed by this International Association of Industrial Accident Boards reported their conclusions which have since been a guide for the revision of the schedules in many state laws and have resulted in more uniform procedures among many of the state commissions.

There are many facts and conclusions in this committee's report with which the medical profession should become familiar before attempting to estimate the percentage of loss resulting from a complete or partial disability. The following quotations are from this report of the Committee of the International Association of Industrial Accident Boards:

1. "Compensation paid for permanent disability is that paid after temporary disability ceases—that is, for the loss of earning power after healing has taken place."

2. "Compensation for such permanent disability should be valued on disability for a lifetime." (Only 13 states allow this—others have a time or money limitation.)

3. "Compensation for permanent partial disability shall be valued as a percentage of permanent total disability."

4. "Permanent disability should be based on a table of fixed ratings, modified by important variable factors. These latter are:—

(a) Age;
(b) Type of occupation;
(c) Presence of pain;
(d) Will to work and other psychic factors;
(e) Preexisting disease or disease set up as a consequence of injury;
(f) Bone atrophy;
(g) Soft part injury or atrophy;
(h) Circulatory changes and swelling;
(i) Nerve and tendon injuries;
(j) Non-union of fractures;
(k) Multiple injuries.

(a) A man of 60 is greatly more disabled by the loss of an arm than a man of 35. There are five distinct breaks in the line representing age:

(1) Fifteen to twenty-five years is the experimental age when average boy is learning his trade, etc.

(2) Twenty-five to thirty years show decided change, usually has learned trade, social status—changed by marriage, etc.

(3) Thirty to fifty years is greatest productive age. At 40, usually starts on decline. Trade is fixed, hard to adapt to new one, etc., accentuating any disability.

(4) Fifty to sixty years the above factors are even more accentuated.

(5) Sixty years and above—age is less important. At the end of industrial activity.

(b) The type of occupation. There is a distinct and unique relation to the amount of disability arising from a given injury. The United States Veterans' Bureau uses a most comprehensive and detailed table of occupations with a variant ratio ranging from one to nine, the lightest occupation usually rating the lowest. The type of work must always be borne in mind. For instance, a seamstress working with thin silk must be able to take a firm grasp of her materials with the left hand. A musician with a disabled left hand can still play the cornet, etc. Disabled people are often able to do much heavier types of work while working for themselves—and from the nature of things, resting whenever a painful spasm arises—than they could for an unsympathetic foreman who might drive them beyond the limit of their endurance. The type of light work that any individual can do is usually not specified. This leaves such partial disability cases at the mercy of the unsympathetic foreman who wishes to relieve his department of the burden of keeping crippled employees; and thus, in one of the cases I have in mind, light work for a crippled man with a crippled ankle, consisted in carrying two pails full of cutting liquid all day long up three flights of stairs, a task which nobody, except when in the pink of health and strength, could do.

(c) The presence of pain, be it ever so slight, is a most disturbing factor, and one extremely difficult to evaluate. In some regions, as the shoulder and spine, the presence of pain can be estimated by the muscle spasm which accompanies painful motion; but pain in a neighboring joint absolutely destroys any values given to the fixed disability ratings of existing deformities. In partial ankylosis or fract-submitted. Especially in partial ankylosis or fractures near a joint it is my belief that a stiff and painless joint is far preferable to a movable joint which produces pain. Tender scars or amputation stumps add one per cent to fixed disability rating.

(d) The will to work and other psychic factors. The mental attitude of the patient greatly influences his ability to carry out the work which his disability, age and occupation should warrant his performing. Malingering and deliberate exaggeration must always be summarily condemned, but genuine psychoneurosis must at least be viewed in a sympathetic manner. Some states, the latest being Iowa and Nebraska, actually pay compensation, for such conditions. (J. A. M. A., April 2, 1932). An examining physician must at all times be on his guard against the obvious fallacy of calling every hidden and unexplainable condition a neurosis or exaggeration, and it is the writer's opinion and his constant practice, never to make a diagnosis of neurosis until after repeated examinations have fully demonstrated the lack of objective corroborative evidence of the actual existence of disability. Often actual disability of a minor grade and psychoneurosis co-exist. The compensating board situated at a distance and seeing only the cold, formal report, cannot be expected to evaluate these conditions as can the observing examining physician.

(e) Preexisting disease or disease set up as a consequence of injury. Preexisting disease which has been rendered active, painful and disabling by the injury, or disease which has resulted from the trauma, must always be given due consideration. For instance, tabetic arthropathy—Charcot's Joint —is often seen following fractures, the first x-rays of which were entirely negative except for the fracture and the condtiion observed to have developed month by month. Osteoarthritis which had hitherto been painless and symptomless can be made painful and disabling, etc. The writer, however, does not agree with the commonly expressed opinions of Coley and Geshickter that sarcoma of the bone can arise from a single injury. Neither one of these two authors offers any rpoof of this claim beyond the history of an injury. One could readily understand how an infection, such as tuberculosis, might crop out of a locus minoris resistentia from trauma, but how, for instance, a giant cell tumor deep in the interior of a condyle of a femur should rise from a single bruise which does not even break the tissues of the soft parts or disarrange the lamellae of the cortex, is beyond the writer's conception. My own experience, however, contains several positive refutations of this theory.

The latest publication on this subject is by Ewing of New York in a magnificent and convincing monograph in which he reviews everything that has been published along these lines and he comes to the "Scotch" verdict of "not proven." It is my personal belief that a malignant bone disease cannot be set up by a single injury.

(f) Bone atrophy. Atrophy or soft part injury which is judged permanent due to nerve injury, circulatory changes, etc., add five to 15 per cent to loss of function.

(g) Soft part injury or atrophy. Swelling of limb adds five to 15 per cent to loss of function, when due to permanent circulatory change.

(h) Circulatory changes with chronic swellings which lead in great part to bone atrophy, and pain

and stiffness in the joint, are not properly evaluated in the United States. The German insurance and compensating boards lay great stress upon the presence of what is called in this country, "traumatic tropho-edema", meaning thereby, "chronic swelling due to circulatory changes", and it has been the writer's experience, which is well covered in the German literature, that this tropho-edema with swelling and stiffness of the joints may travel upward so that an injury to the wrist, say Colle's fracture, has finally resulted in a painful and stiff shoulder. This disability is always recovered from, and as in bone atrophy, physiological use is the best measure of cure.

(i) Nerve and tendon injuries. Tendon injuries are estimated according to resultant loss of function of neighboring joints. Nerve injuries give a combination of disabilities. These are estimated according to the loss of function in joints involved, plus an estimated per cent for atrophy, trophic changes and pain.

(j) Non-union of fractures. Ununited fractures rate as three-fourths of an amputation at site of non-union except in cases of patella and hip, where it rates 100 per cent. Flail joints rate as three-fourths of loss of joint.

(k) Multiple injuries must be divided into two kinds: (1) Diverse disabilities occurring from the same trauma. These are to be computed in the same manner as commercial discounts are taken, not merely by adding the resulting disabilities together. (2) Injuries occurring at different times. In this latter connection the lump sum and gross settlement plans of most states create an injustice for the insurer, and unless the terminology is carefully watched, many ludicrous situations will develop, as for instance, a man receives compensation for the loss of one eye and then while at work loses the sight of his second eye, receiving by the same token a compensation as for the loss of two eyes. In other words, a two-eyed man is compensated for the loss of three eyes. However, if the plan recommended in this paper be followed, this individual would in the first instance have received compensation for the percentage of disability arising from the loss of the sight of one eye and the final compensation for the final total disability resulting from the complete loss of vision.

PERSONAL FACTORS IN DETERMINING COMPENSATION AWARDS*

By Arthur S. Dayton, *Attorney-At-Law*
Charleston, West Virginia

In the very interesting discussion by Dr. Stern, he has accentuated, in quoting from the report of the Committee of the International Association of Industrial Accident Boards, that awards for permanent disability should be based upon a table of fixed ratings, modified by the following factors:

1. Age;
2. Type of occupation;
3. Presence of pain;
4. Will to work;
5. Preexisting disease or disease set up as a consequence of injury;
6. Bone atrophy;
7. Soft part injury or atrophy;
8. Circulatory changes and swelling;
9. Nerve and tendon injuries;
10. Non-union of fractures;
11. Multiple injuries.

Illustrative of the factor of age, it has been pointed out that a man of sixty who loses an arm does not have the adaptability of a man of twenty who sustains the same injury. He cannot accustom himself to labor with only the one member of the extent possible in the case of a younger man, and the conclusion is drawn that he should receive a higher percentage of disability, even though the specific injury be the same in both cases. Likewise, where a preexisting disease is "lighted up" by an injury, the consequence is much more serious and the award should be higher than

*Read before the W. Va. Society of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

would be true in the case of a perfectly healthy man. In the case of multiple injuries the example has been cited that the loss of the remaining member to one who has only one eye, arm or leg represents total disability, although the last specific injury would, of course, cause no such result if happening to an individual with previously unimpaired body.

It would be presumption upon my part to dissent from the opinions expressed by Dr. Stern as to the medical phases of this matter, and certainly nothing is further from my thought. In its legal and philosophical phase, however, I am quite clearly convinced that there is serious question as to the advisability of applying the factors of age, preexisting disease and multiple injuries in compensation cases. It has doubtless occurred to all present who have heard Dr. Stern's lecture that there is a fundamental distinction between these three factors and the others mentioned by him. All of the latter are purely results of the particular injury (with the possible exception of "will to work"), whereas the factors of age, preexisting disease and previously impaired physique have in their origin no direct connection with the particular industrial accident with respect of which a compensation award is contemplated. These three conditions antedate the accident in question and are personal to the injured man. It is unquestioned and unquestionable, as stated by Dr. Stern, that one of sixty years of age who loses an arm, from his personal viewpoint, sustains a greater injury than one of twenty years of age under similar circumstances. Age, previous bodily impairment, or a diseased condition, of themselves, have no direct connection with an industrial accident, however much their presence may render more serious the effect of the latter. It is, therefore, patent that much of the consequence of an accident to one of impaired capacity has a social, and not an industrial origin, attributable as it is to the antecedent condition of the particular man.

I believe that one of the most important distinctions to be preserved in the philosophy of compensation law is that between social, and industrial obligations arising from an accident. If a man with one eye lose his remaining member, he is blind and, to a large degree, helpless. Certainly, he should be cared for, and I am most profoundly convinced that such a man, or others, of impaired capacity who are brought to total disability should be justly treated, and nothing that I am saying should be taken as indicating that such obligation should not be met. The question, however, is whether that obligation constitutes an industrial burden or a social burden. So far as the direct causes of the specific accident are concerned, of course there is no question but that their results constitute an industrial burden, and compensation in any event should be awarded with respect of them. To use the example again, however, of a one-armed man who loses his remaining arm in an industrial accident, all that has happened in industry is that he has lost an arm. The same train of events would have brought about that result to a man with two arms, but the latter would not have been totally disabled. The totality of disability of the former is due to his preexisting impairment. Should industry, through compensation award, and not society, be required to pay damages that are attributable to such preexisting condition? Preexisting impairment being his previous social status, should not society bear that part of his damage attributable to such antecedent condition?

At first blush, it appears indefensible to say that a man who has already lost one arm and loses his second arm, should not receive a total disability compensation award, but such a statement is not equivalent to saying that he should not receive from some source compensation commensurate with his total disability. However, the whole of that disability should not be paid by industry, but society should meet that part of the damages which are attributable to his previously impaired social status. As I have said, if any other policy be

persisted in, the most unfortunate consequences are sure to follow.

It is startling to say that the just payment of compensation is only a desideratum third in importance in compensation philosophy, and yet I believe it is axiomatic that the three great purposes in order of importance are: (1) the prevention of accident; (2) the rehabilitation of the injured man; (3) the just compensation to those who have been injured.

In order to prevent accidents all modern compensation laws have a scale of rates whereby an employer may have a direct incentive to prescribe and enforce safety measures. To rehabilitate injured men is certainly the greatest duty of the medical profession, and is second only in importance to prevention of accidents in the first place. If, however, the distinction between industrial and social responsibility be not preserved, much of your splendid work of rehabilitation will be largely futile. What is its purpose,—certainly that a man who has been injured may learn to adapt himself to his altered condition, to do work within his lessened capacity and to remain a self-respecting and self-sustaining member of society. If, however, he may not obtain employment after such rehabilitation, much of the good of this great program is destroyed.

I have many clients, one in particular I have in mind, who for years have made a practice of giving light work,—at the trap door, or at the picking table in coal mines, for example,—to men of impaired capacity, giving them definite preference whenever they are available. Sometime ago one of these men, who many years before had lost a leg from a non-industrial accident, lost his other leg. Had such claimant been awarded total disability it would have been accentuated to all employers that to hire a man of impaired capacity creates serious contingent liability upon them. How could employers be expected to give employment, much less preference, to men of bodily weakness, if in case of accident, the compensation payable were many times greater to them than that attributable to the specific accident if happening to a normal man. It would be too much to expect of employers. It would be equivalent to asking them gratuitously to assume and pay a part of society's burden. Employers should be encouraged to give to men of impaired capacity work within their capability, instead of being penalized for so doing. Such a policy upon their part is a splendid social and economic contribution. The man with one eye has perhaps not one chance in ten thousand of losing his remaining eye. He could, and should, work for his own support, maintaining his independence as a social and economic unit. If he does lose his remaining eye, of course he should receive compensation for his total disability, but the major part of that total disability is the obligation of society, and its discharge by society would involve a small outlay as compared to the results which would follow if society attempts to foist its obligation upon industry through compensation payments. It is much better that society pay for the one man in many thousands who successively loses two members than that many thousands of one-armed, one-legged, or one-eyed men be rendered unemployable and the burden of their support be cast upon the public.

The same is true as to the man with a pre-existing disease. One of the most heartrending experiences that I ever had occurred in the case of a man apparently one of the finest physical specimens that I have ever seen. He had been examined by a client of mine for employment. A very unusual heart condition was disclosed, altogether unlikely to interfere with the work that was to be given him, but still presenting a hazard to the employer. The man was anxious to work. He was perfectly willing to waive any results arising from this condition. It was my duty to advise my client that such a waiver was invalid and that any accident, not in mere routine of employment, which lighted up this condition would create a liability for compensation, not only as to the specific injury, but as to the collateral results. The man was

rejected as unemployable. Had the likelihood of trouble been imminent, his rejection after the examination would have been protective to him, but the probability of such result was remote. However, there was sufficient possibility that no employer could be expected to take the risk.

This doctrine of "lighting up" of preexisting disease has been forcibly expressed by the Supreme Court of West Virginia in the case of *Hall v. Compensation Commissioner*, twice before the Court, where a piece of slate falling on a great toe "lighted up" a preexisting Buerger's disease, with resultant successive amputations, the cumulated results of all of which were allowed. Certainly no criticism of this decision can be justified under legal precedent. It is in accordance with the overwhelming weight of authority of decisions throughout the country. In the first stages of interpreting compensation law the Courts took the position, in virtually all instances, that disability is to be appraised from the personal viewpoint of the man, a natural attitude springing from most praiseworthy sympathy for the victim, and the Hall case could not have been decided otherwise in view of previous precedent. However, in the last few years the far-reaching consequence of this personal appraisement and the danger of rendering unemployable and social burdens many who, without serious danger, are capable of working within their scope have been realized, and specific statutes have been passed by many legsilatures. The regular session of the West Virginia Legislature of 1935 gave a recognition and a limited and partial solution of the problem in the enactment of Section 9A of Article 4 of the Act.

Some of the states, notably Texas, Illinois and Minnesota, have passed acts limiting awards in such cases. Other states have taken the contrary position. There is variance in the decisions in those states having no statutes. One appellate court, in Alabama I believe, although my recollection may be defective, has taken the position that the whole burden of total disability to a man of impaired capacity should be attributed to the last accident because such a man, even though he do the work of a normal person, can usually be employed at a less wage, and the employer has a consequent advantage. I believe it will be agreed under modern industrial conditions, with the standardization of wages, that such reasoning is not only inharmonious with the facts, but it leads to an inherently unjust result — if a man of impaired capacity can do certain work as efficiently as a normal man, he is entitled to the same wages.

In recent years the problem has become more pressing as employers have inaugurated medical examinations at the time of employment, and I believe I am safe in saying that the soundest, as well as the kindliest, thought is that following the leading decision of *Lente v. Lucci*, rendered by the Supreme Court of Pennsylvania, a case in which the loss of a second eye was involved. The court refused to accumulate disabilities largely because the result of a contrary conclusion would have meant, as stated by the court, that thousands of men employed who have only one leg, one arm, or one eye, would be subjected to great handicap in the field of labor.

It seems to me clear that such is the sounder doctrine, and that the personal variable, antedating as it does the specific injury, is not a legitimate basis for accumulating disability for the purpose of making a compensation award, but in saying so, I wish to emphasize in the strongest way that I do not mean that the man should be deprived of his due on account of such accumulated disability, but society, and not industry, should pay that part of the disability attributable to the antecedent social status. Such payment would be infinitesimal compared to the burden that will be thrown on the public if all men of impaired bodily structure or weakness, or men with preexisting diseases that might be "lighted up", are rendered unemployable.

This is no mere theoretical problem. It is practical, and one that I have met many times in my practice in compensation law. I wish to see rehabilitation of injured men furthered.

It is a great humanitarian program, and, secondarily, is industrially and economically important. I wish to see these victims of industrial accidents rehabilitated so that they may be self-sustaining members of society within the scope of their capability. I do not wish to see them rehabilitated to join the permanently unemployable class. I do not wish to be required to advise my clients that, as a matter of protection under the law, they must cease from giving preference to impaired men for light work. Such a result will certainly follow, in my opinion unless a just recognition is had of the distinction between the industrial and social responsibility for the man who is totally disabled because of the cumulative effects of an accident and a preexisting impairment, weakness or disease.

ALLERGY: AN INDUSTRIAL HAZARD*

By MORITZ F. PETERSEN, M. D.
Charleston, West Virginia

CONSIDERATION of allergic disturbances among industrial workers might be divided into a discussion of what allergic reactions are; why they occur; a description of the commoner symptoms of such illnesses and suggestions for treatment of these disturbances.

Allergy is a comparatively new term in medical literature. It is a broad term which is employed to designate illnesses caused by an abnormal sensitiveness in certain individuals to ordinarily harmless substances. The unusual feature of these illnesses is that they are caused by substances well tolerated by the majority of men. The primary trouble lies in the individual who is so peculiarly constituted that he cannot tolerate contact with some ordinary material or substance without being made sick. Such a person is called allergic.

It has been computed that seven to ten per cent of the workers in industry are allergic. It is believed that this peculiarity is inherited. It is the allergic tendency which is inherited and not the peculiar sensitiveness. So a man who has suffered his whole life from rose fever might have a son who would get violently sick if he rode a horse, due to sensitiveness to horse dander, and another son who would vomit whenever he ate egg.

The tremendous variety of possible causative agents to which one or another man might be exposed and react unfortunately makes it impossible to catalogue them. In one year the *A. M. A. Journal*, contained articles describing sensitiveness to A. S. A., arsphenamine, gum erasers, coffee, house dust, horse serum, pyrethrum, and tobacco.

In general, however, allergic disturbances are more commonly caused by organic substances derived from animal or plant life. So we would expect and do see a much greater incidence of allergic illness in the tanning, woolen, silk and lumber industries than we see in the metal or inorganic chemical industry.

Allergic disease is also common in the food industry, particularly the retail end where employees are exposed to an enormous variety of organic substances, brought from all corners of the world to the grocers' shelves.

While these plant and animal substances are more often the cause of the allergic reaction, they are not the only trouble makers. Inorganic substances such as brick dust, emery powder, or paint pigments can be the agent to which the sufferer is sensitive. It would be a bold person who would claim that there

*Read before the West Virginia Association of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

are any substances to which no one can be allergic.

I once saw a four year old boy whose grandmother had made a mustard plaster and applied it to his chest. She did not know, in fact no one could know that he was sensitive to mustard seed. He nearly died from a most horrible urticarial edema before the reaction subsided.

And so in industrial medicine, no one can predict allergic illness. It is a hazard, however a mild one, of our civilization, both in the factory and the home and cannot be eliminated. In fact there is a feeling among many men interested in allergy that the sensitiveness of our population to allergic diseases is increasing from year to year. More accurate enlightenment on the fundamental nature of allergic reactions would be distinctly welcome to the medical man.

Certain persons whose parents and grandparents are known to be allergic, or in other words to be sufferers with asthma, eczema, urticaria or food sensitiveness, may expect to discover themselves sensitive to one or several substances they meet in their work. Such a history of allergic antecedents should not be a basis for excluding them from industry of any kind until they have shown their allergic disability.

The symptoms of allergic illness are varied. They vary not only in kind but in severity. There are undoubtedly many men suffering some mild discomfort such as a running nose or an occasional headache or a mild skin eruption who have no notion that it is due to their contact while at work with some substance to which they are sensitive. The symptoms of the more severe allergic disturbances are usually bronchiospasm, urticaria, or angioneurotic edema. Gastrointestinal symptoms are also frequent, vomiting or diarrhea. Itching, edema of the face, cramps of the bowel and rhinitis are frequently mentioned as the prominent symptom of the patient's disorder.

These symptoms are readily associated with either contact with some substance at the place of employment or inhaling the dust particles of the air. A history of freedom from symptoms when away from work and a return of symptoms when at work, repeating itself many times is usually obtainable. This narrows the field of search to the unusual substances met in the factory or store. But it usually leaves an intricate problem.

The first step should be to instruct the patient regarding the nature of his illness and have him observe if possible any connection between his symptoms and contact with one or another material met at his work. For example a man might notice that handling manilla rope caused an increase in his symptoms, or that washing his hands in kerosene caused a violent urticaria. It should be possible to select a score or more of the offending substances and perform scratch or patch tests directly on the patient's arm. The possibility of the contact being by inhalation of the dust in the air should be remembered and would suggest testing for sensitiveness to the dust of the room.

As far as we have gone the problem is not so difficult. To accomplish a cure is usually very complicated. Dr. Samuel Taub of Chicago, speaking of sensitiveness to cotton seed, instructed his patient to avoid the following contacts: salad oils, lard substitutes, butter substitutes, sardines, olives, potato chips, fried fish, bakery goods, chocolate candy, Crisco, various cosmetics, salves, linaments, camphorated oil, mattresses, pillows, cotton blankets, stuffed furniture, greens on miniature golf courses. It is remarkable how numerous the sources of contact to cotton seed are and how difficult to avoid exposure to it.

Granting that the substance to which the patient is sensitive is discovered, elimination of contact with it should be tried. The use of gloves on the hands and a complete covering of the rest of the body is a simple measure. The use of an inhalator which filters out the dust from the inspired air is a common practice in many industries in which the air is laden with harmful chemicals. But best of all the man can be shifted to another job, one

removed from the substance to which he is sensitive.

To attempt to desensitize a patient to a specific substance is usually to invite failure. It is known that pollen therapy, directed against the occurrence of hay fever is successful and that medical science knows enough about this phase of allergy to achieve worthwhile results. Food sensitiveness is not nearly so well understood and attempts to desensitize people to these substances are discouraging. Even more so are the attempts to desensitize workers to their sensitiveness to industrial contacts. The present state of our knowledge suggests rather the elimination of contact if possible and failing in that a transfer of the patient to another environment.

Countless situations will occur to you all where such a solution of allergic disability could not be accomplished. Those of you who are acquainted with the working conditions of the many small industries of our state know that a trained and valuable man cannot be moved from one place to another and continue to be an asset to the industry. In the treatment of such a problem I cannot but suggest leaving scientific known fact behind and resorting to a little harmless guess work. Non-specific protein therapy has yielded some marvelous results in desensitisizing people to whatever they are sensitive to. The procedure called "auto haemo therapy", withdrawing blood from a patient's arm and injecting it into their gluteal muscle is harmless and has a good many enthusiastic advovates. The use of milk protein injections also has benefited a large number of patients. If you get desperate, send him to an allergist.

UNIFORMITY IN DISABILITY RATINGS*

By P. R. HARRISON, JR.
Secretary to State Compensation Commissioner
Charleston, West Virginia

IT is very essential that the State Compensation Commissioner's office work in as close association as possible with all physicians whose practice, or a material portion of whose practice, deals with industrial medicine, or the treatment of industrial accidents. We are compelled to rely to a very great extent upon your judgment in a majority of these types of cases. Without such reliance we would be helpless.

We would be unable to determine the extent of a man's injury otherwise. Without your suggestions, and without your personal contact with the injured man, the quickest improvement and the most successful recuperation would be impossible. As you no doubt know better than I, or anybody in our office, one of the major factors in successfully treating industrial cases is a proper analysis of the injured man's outlook. We realize that we are dealing with a type of individual which has possibly a feeling of oppression, possibly a lack of desire to progress in the world, resulting in almost a feeling of immateriality or lack of desire to improve in order to take his place again as a wage earner. Personal pride is lacking in a great many of them, though not in all. The situation depends upon nationality, type of work, history of the operation at which he works, and the man's background. This is one point which, to my mind, renders the immediate attending physicians and surgeons in these industrial cases of paramount value not to the employer, particularly, not to the Commissioner necessarily, but to the man himself. There is a duty owed to all three, as well as to your profession, and you, being on the ground,

*Read before the W. Va. Society of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

knowing the man, and he probably knowing you, that opportunity exists for you gentlemen more so by far, than it would for any inspector, or even an expert analyist, who might be sent in to attempt to aid in the proper disposition of the case.

One point that was brought out very pointedly at the recent meeting of The International Association of Industrial Accident Boards and Commissions, was the lack of uniformity in rating of permanent disabilities. That is a problem which is, of course, very close to the Commissioner's heart in the administration of the fund and our statute, and the appraisal thereof is a matter of paramount difficulty. For example, at the Asheville meeting they brought in several people who had been injured and who were under the jurisdiction of the North Carolina Commission. I might say there were present a number of chief medical examiners of state staffs. As an experiment, four or five of these medical experts were called upon to examine the various people who came in, and, without consulting with each other, to write their estimate of permanent partial, or total disability. In defense of the doctors, who differed so much in their opinions, the cases used were of the unusual type. One man had a fracture of the cervical vertebra, sustained when a piece of lumber fell on his neck. He was a six-footer, forty or forty-two years old. Another case was of a girl who worked in a cotton mill, who had received a minor injury, merely a slight bruise or blow to her elbow, and who developed a palsied condition of her entire lower arm. That was treated, then compensation payments were stopped, she went back to work, worked several months, and suddenly the palsy became evident again. A full history was given of all the cases, and it appeared that this girl had been treated by a number of surgeons, in different ways, and also examined by neurologists, with a view to determining hysteria or damage to the nerves of the arm, and with that history, the opinions of several of the physicians were asked. The estimates of disability varied from nothing to seventy-five per cent of the loss of the entire arm.

Another very interesting case was that of a man who had received a blow on his hand. No fractures were produced as shown by immediate examinations. There was no evident damage to the tissues or to the nerves. Yet that man developed a considerable thickening of his hand, principally in the palmar region, with a partial loss of function of the fingers. He was treated for a while, according to the case history, by immobilization. This was continued for a while, and later traction treatment, electrical stimulation and other kindred measures were used. The greatest dispute arose as to whether or not, in view of the fact that there were no fractures and no apparent damage to the tissues, immobility or traction constituted the proper treatment. Because of the immobility for some period of time, there developed a partial atrophy of only ten or fifteen per cent, and a slight loss of the full range of motion of the shoulder. The question arose as to the responsibility of the Industrial Commission of North Carolina, and thereby of the employer, for the partial loss of function of the shoulder. Various schools of thought were presented and the concensus of opinion was that, despite the fact that there was some controversy as to the propriety of the treatment first given, since it appeared uncontrovertedly that the atrophy and loss of partial function of the shoulder were directly attributable to the injury of the hand and the resulting treatment, the damage to the shoulder should be considered as due to the industrial accident. My personal opinion was that it was proper, but there were a great many divergent views expressed.

In all the cases which were studied there this wide range of estimated disability existed. In order that the provisions of the various statutes would not in any way be reflected in the opinion, it was stipulated that the percentage estimate should be given on the loss of the function of the member, and not the ratings which would be given under any particular statute.

In West Virginia also we find a wide difference of opinion among physicians as to disability ratings. Of course where there is a stated amputation and loss of a member, the determination is easy. In certain other conditions such as back injuries, partial loss of a limb, ankylosis, skull injuries and others of indefinite nature, opinions differ widely. I have been asked a number of times, "Why is it that I, as the attending physician of this man, familiar with his injury, do not seem to receive much consideration?"

It is very essential in the administration of any compensation law that ratings for similar disabilities be uniform throughout the state, and for that reason it is very often necessary for our office to call a claimant in to be examined, or to send him to a special examiner, in order that a rating might be given, consistent with that set up by the Commissioner.

The danger of lack of uniformity in rating, and the possible results thereof, were shown very clearly in one bill which was introduced in the legislature of 1935. That bill provided that appeal should lie from the finding of the Commissioner, not only on questions of compensability but also from percentage allowances, to the circuit court of the county in which the injury occurred. It was immediately evident, and will certainly appear to you on reflection, that such a law would not only have rendered the solvency of the compensation fund unascertainable but would have resulted in gross injustice to both the men and their employers in various parts of the State. For instance a man might have received a rather serious injury in Ohio county, with the Commissioner finding a thirty per cent permanent partial disability. He would appear before the circuit court, call for a jury, and receive a verdict of sixty per cent. Assume the same man, in order to avoid confusion, received the same injury in Raleigh county. He was awarded thirty per cent, and the employer appealed, knowing the Raleigh county juries. That case was tried in Raleigh county and the jury diminished the award to twenty per cent. There would be a twenty per cent permanent partial disability in Raleigh county, and, with the identical injury to the same man in Ohio county, he would have a sixty per cent disability. That, I think, shows the necessity for uniformity of ratings, without which uniformity no compensation law within any given jurisdiction could successfully operate.

You who have been engaged in the practice of industrial medicine and surgery for a number of years will recall that the original compensation law, passed in 1913, and in effect until 1920 or 1921, provided that disabilities of all sorts should be determined by the Commissioner upon the basis of loss of an arm at the shoulder. It did not, however, give the stated losses which we find enumerated in the present statutory schedule. That was very unsatisfactory because of difficulty in administration, and the statute was changed and specific disability ratings given for the loss of members, loss of sight, and things of that nature. Apparently the legislators thought that making the law static would make a vast improvement. It did to a certain extent, but merely gave a more detailed guide for measuring the disability existing in a certain member. There have been presented to you here the degrees of disability which might result from certain injuries, or certain degrees of injuries, to a particular member, and the value of that injury for compensation purposes in relation to loss of the entire member. This is a feature in the situation in which exists the greatest divergence of opinion in the ratings which we receive. Those indefinite injuries are possibly minor injuries to the nerve or bone, muscular trauma, damage to other tissues, and the effect of that damage upon the functional operation of that member. Those are the places in which we meet our greatest difficulty in rating, and those are the cases in which you find that, in order to maintain uniformity, the Commissioner has no alternative but to have the man examined by a special examiner, or order him in for an examination.

In one or two cases which we are handling

we have to agree, in practice at least, upon this: The case of the partial amputation of a member, say the lower leg amputated two or three inches above the ankle, very useful from a functional standpoint, much more useful than if amputated through the knee joint. We further realize that amputation midway leaves a more useful stump than an amputation through the joint, due to the fact that we can attach mechanical appliances. In the Reed and Pugh cases, decided two or three years ago, the Supreme Court of Appeals overruled entirely the Commissioner's percentage ratings as fixed and said that any amputation above a certain joint, and through the segment of the bone above, was equivalent to amputation of the entire segment. Prior to that time the Commissioner had divided the major limbs into segments, lower, middle and upper third, therefore considering and allowing for the use of appliances to continue the man's usefulness.

One point recently discussed is the proposal that we permit a man with definite existing disability to waive that disability as to any additional disability which might accrue after a subsequent injury. A bill to this effect which was introduced in the legislature of 1935 was drawn upon that recently passed by the General Assembly of Maryland. It protected the man's rights thoroughly, provided for examination by physicians for both the employer and employee, and, upon certification by them and by the worker, the man could be employed. I feel there could be no injustice in such a statute.

We have always attempted to secure employment for those injured by the loss of a limb or loss of an eye, but it has been almost impossible to do so. We have not been able to assure employers that they would not be liable for the entire disability resulting from a later injury. Yet, most employers have made every effort to return to work men injured at their own operation. Some employers are unwilling to coöperate, but a majority are doing their utmost along those lines, consistent with the necessary consideration by them of the fact that they cannot afford to burden their plant with too many dangerous employees.

There are one or two observations which I want to make at this time. One is regarding the situation existing in our statute by which there is no provision made for an award of compensation by the Commissioner upon a temporary partial disability basis. As you no doubt know, there are only temporary total and permanent partial disabilities, short of life. We have no temporary partial. It is very difficult to return a man to remunerative employment because he knows, and we all know that his compensation, as carried on a temporary basis, will cease as of the date he returns to work. We know that in certain injury cases it is essential that a man be returned to light work in order to redevelop the function and use of the injured member. We know he is not able to snap back to normal after being off six months with a broken arm or an injury of that nature and do a full day's work. Our law should provide, and I believe with the coöperation of the medical men and employers will provide within a short while, for an award by the Commissioner upon a temporary partial disability basis.

The element of psychology in the employee constitutes one difficulty under our present law. The doctor says, "You go back to work", and compensation ceases. The same proposition has a great effect due to the method of payment of a permanent partial disability award. As we know, the statute provides for the determination of the degree of disability and the payment of compensation; that is, four weeks for each per cent award, with the weekly rate of compensation being based upon the rate of the man's earnings prior to the date of injury. Let us assume that a man was awarded a fifty per cent permanent partial disability at the rate of $16.00 per week for 200 weeks, for two or three fractured vertebra. He is paid in monthly installments, the Commissioner having no alternative but to make payment in

that manner. The man gets $65.00 or $66.00 a month for 200 weeks or for 50 months, more or less. He has no worries. Suddenly payments cease. The man will say: "I have been doing no work." He has made no arrangements to work. The employer may have his plant full at that time, or may have overlooked the fact that compensation was about to expire. The man has been living on compensation for four or five years, keeping his family together, with nothing to worry about. There is a situation which should not be allowed to exist.

What the remedy is, in detail, I would not say. There are different opinions on that. I feel that some provision should be made, and certainly a very elastic provision, to operate within the discretion of the Commissioner, whereby payments would gross a certain amount; that would not affect the total amount of money to be paid, but, depending on the change in his physical condition, his economic situation, social conditions at home, the Commissioner should have, within reasonable limits, the discretion to increase or decrease from time to time the amount of payments. When the expiration of the period of compensation approaches, let the Commissioner have machinery to contact that man, see what he is going to do when the award expires, and give the Commissioner the power to taper the payments gradually. Bring the man to a self-supporting level gradually. That is something that you gentlemen in close contact with these various industrial problems should give some thought to.

The Commissioner realizes that all of the employers and a great many employees depend upon the doctor's advice in things other than medical. All matters can be handled by you gentlemen in a way to aid all interests and at the same time you will find, I believe, that the human element being considered in all these relationships, the worries and difficulties which face you every day, hundreds of times a month in handling industrial cases would decrease.

We of the Compensation Commissioner's office believe we are reasonably familiar with the difficulties you have. You who are on the ground are the ones who have the difficulties, the ones who have to handle the men, explain to them why a certain thing can or cannot be done. It is to you that the Commissioner looks, as a sort of liason man, not only in handling strictly medical questions, but in handling the man in a correct psychological manner.

The advice that you give the Commissioner will be very appreciatively received and it will not only benefit the administration of our office but also all concerned.

In closing, I wish to convey this message: That is, we desire every one of you to feel that you are personally in touch with those who are employed in the Commissioner's office. Whether you are around Charleston very much, and able to make the actual personal contact, is not so material, but when questions come up that are apparently inconsistently handled, or which, to your knowledge, being on the ground, do not meet the conditions as they exist, that information should be conveyed to us in the spirit of cooperation. It is very difficult to take a form report, or pictures, and correctly arrive at a conclusion, whether a factual or a medical conclusion, and it is only with your assistance, by elaborating upon certain facts, that justice can be achieved.

HEART RESERVE

It is wise to use all precautions to safeguard the body during the advancing years so that one's bodily health as well as the youthful spirit may be maintained as long as possible. Dr. Frank T. Fulton continues his discussion on "Budgeting the Reserve Strength of the Heart" in the January *Hygeia*.

If by chance one suffers the serious accident of having one of the coronary arteries blocked by a clot, thus cutting off temporarily the circulation of a portion of the heart muscle, the situation is difficult. The reserve strength may be at at the zero point. Absolute rest in bed for a long time is imperative.

THE PROBLEM OF CHEST DISEASE IN INDUSTRY*

By G. H. BARKSDALE, M. D.
Charleston, West Virginia

IN choosing a title for my discussion this evening I have refrained from referring specifically to silicosis, but rather to dust hazard in general, for we as physicians are prone to rush new subjects. Though an ancient disease, in its modern concept, silicosis is new to the most of us. Accordingly, we should guard against reading silicosis into too many cases, thereby making profound errors in diagnosis and prognosis, harming our patients with a resulting cheapening of ourselves, and at times bringing about unfair or doubtfully fair litigation. Our first thought should be that men engaged in dusty industries are subject to all of the chest diseases which afflict other men and more besides.

I have recently seen a man, allergic to wheat, who through necessity has had to continue his work in a flour mill. This man is now an asthmatic.

John Doe, age 20, has had recurring attacks of pneumonia, probably had empyema as a child.

An applicant for a job has a chronic antrum, frequent colds, and x-ray evidence of chronic infection at the bases of the lungs.

Another young man wishes work in a glass plant. X-ray study shows heavy calcification about the hili of the lungs and old apical scars; has had pleurisy with effusion.

The point that I wish to emphasize by these briefs is that one with any sort of respiratory disease or tendency to such has no place in the dusty trades. However, such men are there. Each of the men in turn to whom I have referred, will be seriously jeopardized if exposed to dust. If they have no silica exposure, they may live on as substandard men. If they are exposed to silica, their hazard is definitely worse by virtue of their unhealthy lung tissue. If the unfortunate fellow with the arrested tuberculosis last mentioned, is exposed to silica over a considerable time, he is doomed. All of the others are certainly more vulnerable than the well man. Further, we should bear well in mind when called to testify that we should be honest, first to ourselves. I mean specifically that just because paid by a corporation that we should not allow our sympathies to slide too easily to the bread and butter side and again should not allow our testimony, or sentiment, to flow too easily to the side of the plaintiff, a thing that so well might happen when the remuneration is contingent on the outcome of the suit.

If there is any question in one's mind as to the enormity of the dust hazard, I might quote as follows: "The silica dust hazard is probably the most widespread and insiduous of all hazards in the environment of mankind." Sappington, director of the Industrial Health Division, National Safety Council says: "Dust is next in importance after accidents as a cause of occupational disability and death." If you think in terms of figures, there are suits incident to dust hazard pending in New York in April, 1934, totaled thirty million dollars. The total amount of suits filed in our State incident to the Boncar affair was ten million dollars. Each case of established silicosis costs industry, or the insurers, approximately ten thousand dollars. There are thirty trades that involve the hazard of pneumoconiosis. And in our thinking we should include the incidental or odd-job fellows, as the man for example, who for years might true grind stones or a small group of men in a Welch coal mine who developed silicosis because it was their job to tunnel through certain dips or faults in the roof of the mine which were high in silica

*Read before the West Virginia Association of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

content. Or the occasional lens grinder, I suppose we have six or more in Charleston, of whom we scarcely take cognizance. The case that defeated me was the tap dancer who danced for twenty years on sanded floors, finally to turn up with a second degree silicosis. Then we have the transient, the man who may have had his exposure five to fifteen years before in a far removed community and is now working in a grocery store.

Miller, in a recent article in *Annals of Internal Medicine*, states that "The lungs present the most extensive surface of the body that is exposed to the outside air. By virtue of the extent of surface and its very sensitive and vital function, it is deserving of special protection." He theorizes that we have a normal tolerance for dust, which he refers to as the lungs' self-cleaning power. Conversely, if a lung receives into its finer structures more than it can remove, there follows a clogging of the lymphatics by exudate, "dust cells". The exudate organizes into fibrous tissue, beginning in the walls of the bronchioles, it passes out into the peribronchial tissue, with resulting diminution of respiratory space, impairment of self-cleansing function and increased susceptibility to subsequent bacterial infection. Such exudate with resulting fibrosis may also come about as a result of infection *per se* and vascular changes.

The points in the above statements carry the crux of all chronic pulmonary disease. Something brings about an exudate in the vital areas of the lung with a resulting fibrosis.

While I have generalized in the matter of dust, I do not wish to imply that all dusts are equally hazardous. The nearer they approach the composition of the human body, the less toxic. For example, animal dusts are least toxic, cotton next, and silica most so. Others are directly toxic, as lead, mercury, etc.

One thing that has clouded the study of dust diseases is the group of new words employed: Pneumoconiosis, literally-d u s t e d lungs, means any disease of the lungs caused by dust. It is, therefore, to be understood as a general term; as subheadings, we have asbestosis, caused by the inhalation of asbestos; anthracosis, from coal; carborundrumosis, from carborundrum, and last and vastly most important—silicosis, from the inhalation of silica.

Silicosis has been defined by the American Public Health Association as follows: "A disease due to the breathing of air containing silica dioxide, characterized anatomically by fibrotic changes and the development of miliary nodulation in both lungs and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis, some or all of which symptoms may be present, and by characteristic x-ray findings."

The definition as given, states so very clearly the characteristics of the disease that one can do but little more than elaborate on the various phases referred to.

In reviewing the important factors in the production of silicosis, one should have knowledge of certain facts concerning the claimant's dust exposure, namely:

1. Particle size and concentration per cubic foot;
2. Mineral composition of same;
3. Length of exposure.

Particle Size: To be of potential danger in the production of silicosis, the particles of silica should be smaller than ten microns, the smaller the more hazardous. One-half to one micron particles account for our greatest mortality.

Particles per Cubic Foot: It has been observed that the concentration is even more important than the particle size, in that one might combat very small particle size for a great while in low concentration, due to the self-cleansing power of the lung as emhasized by Miller. Above ten million per cubic foot the concentration is dangerous. The true danger zone with dust with 25 to 35 per cent silica, rests between 9 to 20 million particles per cubic foot. Unfortunately, it is not the heavy dusts which are severely hazardous, it is the very fine, unseen dust, which is most dangerous. In the absence of a beam of light,

air containing dust less than 10 microns in size may look clear to the naked eye.

Mineral Composition: Particles less than 10 per cent silica rarely produce silicosis, the hazard being largely in proportion to its silica content. So important is this that one might postulate for example that 20 million particles of 10 per cent silica is the same as 10 million particles of 20 per cent silica.

Certain dusts, such as gypsum, sea coal, aluminum oxide and certain clays in any concentration are by some regarded as harmless and may even be protective. From a purely physiologic standpoint, others agree with Sayre, who states that "Those exposed to any sort of dust are more susceptible to silicosis."

Length of Exposure: The period of exposure to silica until development of the disease is highly variable, depending largely on the factors just mentioned, plus number of hours of work, vacation periods, known respiratory infection, etc. From recent studies in this State and elsewhere it is well established that the disease may develop in a matter of months or may go over into a period of many years.

Clinical Signs and Symptoms: The clinical signs and symptoms of silicosis are notoriously unreliable. I would advise, when considering a man who has had a dust exposure, now is dyspnoeic, little to no chest expansion, atypical findings on aucculation, that we have sputum and x-ray examinations. Those accustomed to handling granite workers and those of other trades with a definite silicosis hazard may recognize the disease without x-ray. Practically the diagnosis is recognized with certainty only by x-ray examination. Three stages of the disease are commonly described. They merge indefinitely one to another. A few cases for a variable period of time continue as uncomplicated silicosis, with the onset of tuberculosis, the symptomatology takes on the symptom complex of silicosis, plus tuberculosis, with positive sputum, temperature, sweats, and what not. Irvine in his South African studies has stated that about 75 per cent of all silicotic persons die of tuberculosis. Gardner replies: "The same is probably true in this country."

At times the diagnosis of this disease, (even by trained workers) and in the second stage, is difficult and unfortunately on occasions such workers by giving directly contrary testimony in court have, and not without reason, discredited medical men.

Prognosis: This is a sad chapter. The only cheerful thought is that if men are removed from silica dust during or before the second stage, the disease may be arrested. However, the disease is progressive and by far the majority of such cases go on to a fatal issue. The third stage is always fatal. Oddly enough, many maintain the appearance of good health for a very long period of time. The time of onset and tissue response to tuberculosis obviously affects the prognosis.

Pathology: In discussing the pathology of silicosis it should be understood that the old idea of particle sharpness and foreign body like action is obsolete. It has been proved to the satisfaction of most workers by animal experimentation and what not, that silica dioxide as such is a definite tissue poison. Fifty per cent of the inspired air reaches the bronchioles, particles of silica arriving there are taken up by phagocytes. By virtue of its toxic effect, many of them die in the bronchioles. As a result an inflammatory exudate is poured out which in turn causes more scavenger cells to rush in. Certain other cells probably not so heavily laden with silica make their way out into the lymphatics and lymph nodes about the bronchioles where they stop. Many come to rest in the periphery of the lymph nodes; others pass on to the collections of lymphatic tissue along the course of the lymphatics. Fortunately, many make their way to the lymph glands about the hili of the lungs. The lymph nodes apparently in an effort to protect themselves tend to gather the particles into minute masses which in turn become larger and larger fibrous masses. These later become the classic silicotic nodules. As these nodules continue to increase in number and size by virtue of pressure they

produce stasis in the lymphatics to such an extent that the silica bearing lymph tends to break through with resulting deposit of silica in the loose perilymphatic and adjacent areolar tissue. This process continues until a larger part of the lung is blocked by these fibrotic masses. The x-ray findings in these cases demonstrate very nicely the pathologic process. In the first stage of silicosis the only markings to be seen are the silica impregnated lymphatics. Later, in the second stage, these markings take on a certain budding which is the deposition of the silica in the lymph nodes along the lymphatics and finally, in the third stage, the process is well advanced, the whole field radiating from the hili, (butterfly-wings) becomes covered with the silicotic nodules. These steps in the development of silicosis as shown on the x-ray film have been very aptly likened by Irvine to "The limb of the bare tree, the limb in bud and the limb in full leaf."

Treatment: As has been mentioned, the treatment revolves primarily about protection from dust by means of respirators, wet processes in manufacture, and other methods best known to safety engineers. Men and employees alike should be educated in the matter of dust hazards of all kinds. It should be stressed that silicosis is a most insiduous disease, often misinterpreted by the worker and doctor alike, that silicotics should be doubly urged to avoid open cases of tuberculosis.

After one has done all that is possible to avoid the disease the next most important phase of prevention is annual examination, both physical and x-ray with due regard to a careful history taken by one who knows how to recognize the symptoms of the disease when related.

Summary: West Virginia is an industrial State. The dust hazard is of paramount importance to everyone of us.

Anyone with any pulmonary complaint should not be permitted to work in dust.

Stratton, supervising engineer of the Traveler's Insurance Company, said: "All in all, it is best for any engineer to proceed upon the basis that any dust of any kind in any concentration, creates an industrial exposure and to suppress the dust at its origin."

Pneumoconiosis is a condition in which the volume of inhaled dust exceeds the lung's normal self-cleansing function, as a result exudation and fibrosis follow. Fibrosis means pathologic physiology and disease.

In considering dust hazards the following points should be analyzed: Particle size and number per cubic foot, mineral or chemical composition and length of exposure.

For a true conception of silicosis, a knowledge of its pathology is imperative.

That the symptoms and signs in silicosis may be very meagre, exposure to silica, lack of chest expansion and shortness of breath are the cardinal factors in suspecting and diagnosing the disease.

The diagnosis cannot with certainty be made without x-ray examination.

In the majority of cases silicosis is a progressively fatal disease, 75 per cent of all cases dying of tuberculosis.

ASPHYXIAL DEATH

Death from asphyxia is twice as frequent as death caused by automobile accidents. Dr. Paluel J. Flagg sets out to prove this statement in "P. A. D.—Prevent Asphyxial Death" in the January *Hygeia*. The discovery of the intimate relationship of many forms of accidents hitherto looked on as in no way related is the immediate reason for the present movement to prevent death in this form.

Submersion, lightning, electric shock, drugs, anesthesia, poisonous gases, mechanical suffocation, hanging and conflagration are some of the apparently disconnected causes of death for which artificial respiration is the first treatment. Without artificial respiration the patient dies.

The fact that some 18,432 persons died from various phases of general asphyxia in 1933 led to the formation of a society to prevent asphyxial death. The approval of the American Medical Association was accorded in June, 1934.

Asphyxial death gives no warning. It strikes like a bolt of lightning. One cannot practice a means of prevention and treatment at the time of the accident. One must be prepared when it comes.

THE CONSERVATIVE TREATMENT OF COMPOUND FRACTURES*

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THE logical difference necessarily existing between the treatment of simple and compound fractures lies in the ever present danger of infection.

The cardinal agent in combating infection is the resistance of the tissues themselves, and it is axiomatic that traumatized tissue is more prone to infection than healthy tissue. The animal experiments of Nathan have shown that the soft parts are usually damaged for at least an inch above and below the seat of a simple fracture; this certainly would be more true in compound fractures even of the simplest puncture type where while the skin may show a small wound, the soft parts internally may be most severely torn. When to the initial trauma one adds the greater insult to the soft parts and bones by such operative procedures as bone plating and wiring, the application of Parham bands, levering with metal levers and the like, then one has added immeasurably to the chances of infection instead of having taken any steps towards preventing or combating such infection; and all for the sake of anatomical reposition and bony alignment, which trained orthopedic surgeons should be able to secure by accurate manipulation, splinting and extension, and which would surely have to be immediately abandoned were infection to set in.

Therefore, it is the firm conviction of the writer that in compound fractures, all immediate operative interference upon the bones or soft parts for the sole purpose of reduction and alignment is contraindicated and to be condemned. Even the immediate use of such measures as ice tongs, Steinman pins, etc., distal to the fracture are to be discouraged in cases in which the circulation is too badly impaired.

Debridement, practically unknown before the war, came into vogue as the only successful method of preventing the virulent infections then prevailing, and under the slogan of "immediately converting a compound into a simple fracture", is in good repute in many of our largest clinics today. Unlike the bone operations already adversely referred to, its purpose is primarily to reduce the chances and dangers of infection and were there no other alternative or less destructive methods equally efficacious, it would perforce be the only legitimate method of treating compound fractures.

It has for its object the excision of the field or track of the trauma, thereby removing en bloc the infective agents together with all devitalized and susceptible tissues, including all free pieces of the fractured bones. The wound is then sewed up and primary union is anticipated. The truth is, however, that as practiced by general surgeons and practitioners, by and large, primary union without some persistent oozing, drainage or infection is rarely attained; while the amount of tissue advised and often actually removed at operation is sometimes amazing; for instance, the articular cartilages of the joints, on the ground that the cartilages are exceptionally susceptible to infection. To disprove this at least seven cases from the writer's experience could be cited in this connection where the ankle joint was widely opened by compound fracture (one case was further contaminated by a large amount of road dirt in the joint), and which after careful lavage of the joint surfaces with mild antiseptics such as rivanol,

*Read before the W. Va. Association of Industrial Physicians and Surgeons at Charleston on October 4, 1935.

acriflavine and the like, went on to primary healing without suppuration.

As far as the excision of devitalized tissues is concerned, few of us are so clairvoyant that we can prophesy with any great accuracy when any given tissue is going to live or how badly it must be damaged before it is certain to die and slough.

Then there are structures that one dare not remove out of a compound fracture wound no matter how they look, as for instance the popliteal or brachial group of veins, arterieis and nerves, etc. These must be treated conservatively by cleansing and antiseptics, even in an extensive debridement operation. The whole purpose of this contribution is to demonstrate that any conservative treatment that has any chance of saving such important structures as one dare not remove, should be efficacious enough to save the muscles, ligaments, cartilages, bones and other tissues in the same wound from infection.

The strict conservative, antiseptic, rest treatment has yielded such satisfactory results in the past 20 years that routine debridement or the immediate bone fixation operations in compound fractures have been forbidden in our operating rooms. Although our figures are from a general hospital of 260 beds located in a large industrial, railroad and automotive center (The Orthopedic Service at Mt. Sinai Hospital, Cleveland, has complete control of all fractures, both simple and compound, except the most severely crushed and mangled limbs, in which the soft-part injury is so extensive that the fracture is merely an incident in the debacle. Such cases are treated and usually amputated by the general surgeon and are not included in this paper), where many cases in the private rooms are treated by non-staff men, but where the emergency surgery itself is performed by the resident staff, under the direction of an assistant orthopedic surgeon, all well drilled in the fracture technique to be described, there has never yet, in an experience of over 680 compound fractures, been a life lost, or a limb sacrificed and only three known ununited fractures came into existence due to the conservative treatment, i. e., the avoidance of all operative interference with the area of fracture as far as surgically possible, and then following this up with reduction of the fragments, satisfactory fixation and complete rest. There have been some infections, some due to faulty carrying out of the technique, others in spite of excellent technique; few of great seriousness or stubbornness. In all of these drainage was easily maintained. There has not been a single case of permanent chronic osteomyelitis and but three cases of nonunion; there have been more numerous cases of slow union, all of which, however, with three exceptions, were happily brought to union without operation within the twelvemonth period.

Six cases of gas gangrene occurred in this series, all saved by timely operation. Lest these six unfortunate occurrences should be too arbitrarily charged against this form of treatment, they should be contrasted with reports from clinics where debridement is the rule.

Baldwin and Gilmour report in the Annals of Surgery, February, 1927, (LXXXV, 161) six cases of gas gangrene after compound fracture, all of which had immediate cleansing and debridement operations; some had in addition, gauze drainage, and in one case "radical drainage" was employed. In view of these cases, the development of the six cases of gas gangrene in the series of the author cannot logically be charged against the conservative treatment employed. At present we are giving an immediate preventative injection of combined tetanus and gas bacillus serum.

The technique of the conservative treatment consists in shaving the skin (away from the wound which is to be protected with gauze) and the thorough cleansing of the parts with green soap or ether, followed by alcohol and iodine or flavine. The parts are then draped as though for a major operation and the operator gloved and gowned. The protruding ends of the bones and the wound

are now thoroughly cleansed with ether and alcohol, followed by iodine and alcohol. Foreign material is removed and small pieces of loose bone free from the mantle of periosteum presenting themselves in the wound can also be removed. Larger pieces even if in sight are allowed to remain. Uncontrollable hemorrhage must be checked with hemostats or ligature, but a well trained personnel will rarely feel compelled to resort to this, but will rely upon firm bandaging to control the usual hemorrhage in these cases.

As far as possible, fingers and instruments are kept out of the depth of the wound. The bones are now reduced by manipulation and extension. When the opening of the skin is too small and difficulty is experienced in reducing the fragments, it is inadvisable to shove them back with a blunt instrument or the gloved finger. It is better to enlarge the skin wound with a pair of scissors and then reduce by manipulation and traction. Drainage or Carrel-Dakin tubes are never used.

When the soft-part injury demands operative repair the tissues are gently and carefully reconstructed with as few stitches as possible and the skin always loosely sutured in such cases.

After the reduction a generous dressing is applied, the hemorrhage controlled by firm flannel bandages and elevation, and the fracture is firmly and adequately held by proper extensions, casts, etc. We use reinforced pillow splints for foot, leg and knee; Thomas splints for the hip and femur; coaptation splints for hand and forearm; and Jones or Thomas splints for elbow, arm and shoulder; wires and pins where indicated, etc.

The patient is then put to bed and kept absolutely at rest for at least four or five days, often for one week. Opiates and sedatives are freely administered and the patient is never permitted to toss or thrash about in pain or delirium. X-rays are usually not taken before the fourth day and then always in bed. If the hospital is not built so that the bed can be wheeled into the x-ray room, then a powerful mobile unit should be purchased and bedside radiographs taken; but the patient should never be handled and lifted any more than is absolutely necessary.

The patient is placed upon a light diet, the bowels cared for by enemas on the second day, and then not fussed over. Eusol powder insufflations are used to control any odors from the dressings. Too much attention need not be paid to moderate rises in temperature. This may be due to a multiplicity of causes and of itself may look alarming, but unless the limb itself is clearly the seat of a severe infection, unless the patient is really toxic and has a real leucocytosis, the wound need not be touched, except, perhaps, to change the dressings for inspection. Often a little blood-tinged serum runs out. The clinical observation of the limb checked by a blood count is a better guide as to the condition of the wound than is the temperature curve.

After the period of danger of infection is over, then the final complete reduction of the fracture can be safely carried out by any method the surgeon prefers.

I do not think the dictum of delayed reduction is as serious as it may sound because I have shown you lantern slides of several series of fractures that were reduced after eight or ten days, and a few, which on account of severe damage, impaired circulation or other causes, were not reduced for several weeks. You will recall one comminuted fracture of the tibia with upward dislocation of the head of the fibula to two inches above the knee joint, which was completely and perfectly reduced by a Steinman pin four weeks after the injury, the limb in the meantime being supported by wire splints to facilitate dressings. A great many of our cases are reduced at once in the emergency room, such fractures of the wrist, ankle, etc.

Summary: The best results from compound fractures I have seen have been from cases in which, after the field has been thoroughly prepared with ether and iodine, the soft-parts wounds have been loosely sutured and the skin closed over; in which the fractured bones have not been unduly manipulated

or subjected to surgical operations of any kind whatever, and in which the fracture was securely immobilized and the patient kept quiet and at complete rest until the danger from infection was over.

The worst results I have seen—infection, osteomyelitis, non-union and death—have been in cases in which, as a part of the immediate treatment, the bones have been plated, wired, screwed, resected or otherwise operated on or unduly manipulated.

After a fracture has once been cleansed and put up in fixation, complete rest and quiet is the best means of preventing and combating latent infection. Compound fractures thus treated are "potentially clean" and should not be drained.

The Three Cardinal Clinical Signs in Diagnosis of Fractures

The proper diagnosis of fractures and dislocations is never such a simple matter as the elaborate use of the x-ray today seems to make it. The slavish dependency upon the x-ray findings has led to many serious and grievous blunders. There are some conditions which are by common consent, fields in which the x-ray alone is held to be untrustworthy as, for instance, impacted fractures of the femur, but we are too prone to forget the actual limits of radiography in general and to place altogether too much reliance upon the x-ray* disclosures and not nearly enough upon clinical findings.

If the patient presents marked angulation and deformity where the bones should be straight; if there is evident preternatural mobility and crepitus, even a layman can make a clinical diagnosis of fracture, but should the fracture occur near a joint or be impacted, or if for any reason the above named gross clinical symptoms are absent, as they so frequently are, it would seem that our apparent present day medical knowledge breaks down and without the x-ray we seem to be at an absolute loss to diagnose the fracture.

Many years ago, long before it was the customary practice to use the x-ray at all, except as a sort of a curiosity, I formulated the plan of diagnosing fractures of the long bones near the joints by the presence of three cardinal signs, which combination I believe, is almost pathognomonic of fracture. These signs are, first, localized swelling; second, tenderness over the bone itself and sharply localized to the area afflicted; and third, delayed hemorrhage and bloody discoloration, all in an area not the seat of a direct trauma. For instance, should the patient have fallen down upon the outstretched hand and the examining surgeon finds that at the lower end of the radius is an area of swelling and in the middle of this swelling a definite area where the bone is a great deal more tender and painful than it is higher up or below, and hemorrhage or bloody discoloration follows within a short time, it is my opinion that this spells a fracture of the lower end of the radius and nothing else. The so-called sprain gives the pain and tenderness over the ligament and it is also relieved by injection of one-half of one per cent of novocaine into the injured ligament (LeRiche).

It has been my practice to make a clinical diagnosis of fracture from the presence of these three signs alone, and to compel my associates, internes and residents to do likewise; to designate and to put down in writing the exact location and extent of the fracture thus diagnosed before x-rays are taken. If the x-ray confirms the diagnosis, well and good, but if it does not, the patients are never told it is not a fracture and allowed to go their way but the case is treated for fracture, and if the pain and swelling do not subside in a few days, thus making it clear that the diagnosis was mistaken, check-up x-rays are again taken, which in a majority of cases which have had to be treated in this fashion, have shown that the clinical diagnosis of fracture from these three symptoms alone is absolutely reliable.

The writer is in possession of a series of

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* (The writer is here speaking of the "run of mine" x-ray plates taken by the ordinary member of the American Roentgenological Society in his every day hospital work and not of the extraordinary plates shown at x-ray exhibitions).

150 x-ray plates or lantern slides made therefrom in which the original x-rays were negative for fracture and in which the triad of symptoms mentioned above were positive, which were treated as fractures and which subsequent check-up x-rays confirmed the clinical diagnosis.

The writer does not decry the use of x-rays but he demands and recommends that a clinical diagnosis of fracture be made and that both A. P. and lateral x-rays of the part be taken as a check-up by competent radiographers with good technique. Check-up x-rays are also taken after the fracture has been "set" and fixed, and subsequent check-up x-rays to be taken as often as the nature of the fracture or the condition of the patient warrants.

A lantern slide demonstration followed.

Abstract on "Healing of Bumper Fractures"

The automobile is our greatest peacetime agency for human destruction in existence today. In 1934 one out of every hundred of the inhabitants of this country was injured by this veritable juggernaut of destruction. Nonfatal automobile accidents numbered 1,257,000, which was sixteen and two-thirds per cent of all the accidents occurring in the United States of America. It is thus easy to understand how changes in the style of construction of this modern vehicle is bound to change the character of the fractures treated in our hospitals.

I only wish to call your attention to the fact that when automobiles had to be cranked by hand we had the Reverse Colle's fracture of the lower end of the radius from the backfire of the engine. After the bumper came into being, with the center of gravity of the car still high, comminuted fractures about the knee joint were quite characteristic. With the passing of the "dashboard" and the coming of the modern "cowling", crush fractures of the patellae from direct violence against the cowling became common. The use of nonshatterable glass in the windshield has given rise to an epidemic of bilateral fractures of the upper or lower jaw from head-on collisions or sudden stoppage. Today we have the modern bumper fracture of the shin.

With the low center of gravity of the present day cars and the peculiar streamlined type of bumper, the bumpers of most popular cars today stand at about only 13 to 14 inches above the ground with the car at rest. When a fast moving car is stopped by application of brakes, inertia and centrifugal force compresses the front springs and the front of the car is lowered as much as three and four inches, so that when a standing or walking individual is struck by such a car, a very typical comminuted fracture at the middle of both tibia and fibula takes place.

I have termed this fracture "Modern Bumper Fracture of the Shin", and it is characterized by severe comminution and splintering of the bone with many larger and smaller fragments, with long linear fracture lines running up and down the tibia, and in the center of this comminution a diamond or pyramid shaped piece of bone out of the cortex, usually out of the anterior surface, often lying free from the rest of the fragments. The injury to the soft parts is usually very severe and the fracture is often compounded.

Similar fractures have also been noted in the history of mining injuries coming from coal cars and falling rock.

The reduction of these fractures offers no new problem except that the use of the double pin or double wire technique is attended with great hazard because infection often travels along the wires and with the bone so thoroughly splintered, infection and osteomyelitis has often resulted from use of these mechanical measures.

It has been the experience of the writer that no matter by what method the bones have been reduced and fixed, the bumper fracture is very slow in healing, and this, of course, influences not only the prognosis but the method of treatment.

In personal experience of over 125 cases of which we have accurate records of the healing time, and of several hundred more cases treated by other men at the various hospitals

with which the writer is affiliated, he has found that the average healing time is approximately 6.2 months. Compound fractures heal a little slower than simple ones and there are but very few going on to non-union. The longest time recorded before the case healed spontaneously, was a woman untreated by any physician after six months, who walked around in her brace, and had a non-union at the end of 18 months but when she was next examined three years after the accident, had a solid union.

The method of treatment recommended by the writer can be outlined as follows:

1. Primary reduction and fixation by the elected method for about eight weeks;

2. After eight weeks the cast, if applied, is removed and a plaster mould of the leg is made and measure taken for a walking brace reaching to the thigh, with lock joints at the knee;

3. The plaster cast now with walking iron or walking heel is reapplied. By this time usually sufficient fibrosis has taken place within the fracture area that the leg is no longer flail and the danger of slipping of fragments is no longer present. If this is not the case, the cast without walking splint is reapplied and the patient compelled to use his crutches for four to six weeks longer;

4. From the mould a model of the leg is made and a leather steel envelope brace with ring locks at the knee, is constructed. This is form fitting and allows full weight bearing without any motion between fragments or any danger of angulation. The ordinary caliper brace is inefficient and does not completely immobilize the fragments. This brace must be worn continuously until solid union takes place, to prevent deformity from weight-bearing.

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CAN THE MEDICAL PROFESSION ENDURE?

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From the early dawn of history it has been the lot of humanity to suffer and eventually to die. In the beginning the attitude of the mass was one of indifference to human suffering, or the principle of the survival of the fittest, which in those primitive times was perhaps a blessing as it developed sturdy individuals who were able to cope with unfriendly conditions and adjust themselves to the environment by which they were surrounded. But as the spiritual element of humanity began to gain ascendency over the physical in the evolution and development of the race, a spirit of sympathy and mercy began to attain that brought to the sufferer help in time of need and certain individuals began to be designated as physicians or doctors. This profession gradually developed until it became one of the most honored and honorable professions, with a code of ethics that has been the model for other professions the world over.

The high ethical plane on which the profession has maintained itself is being besmirched by certain members who have not been able to withstand the temptation and pressure brought to bear by a changing and radical social order to lower our standards to a commercial basis, and by their unethical conduct are putting the profession in disrepute to the detriment of all its members. This lack of respect is largely responsible for the effort of the public in trying to wrest the control of medical matters from us and place them on a politically controlled basis, and it is through this attitude that state medicine is entering like a termite and weakening the entire structure of the profession.

If state medicine attains, the entire relation of the physician and patient will be disrupted and our independence of action will be destroyed with rule by industrial interests taking its place. Each individual patient, with whatever disease he may be suffering, is a distinct problem and cannot be handled en masse. Therefore the law recognizes the privacy of the relation between physician and patient as being of vital importance in the successful combat of disease and the assurance of such privacy brings the patient to the physician for diseases which would otherwise go untreated.

The practice of medicine dominated by politics would mean that the man with the most pull, who would be willing to work to the interest of his employer rather than the good of his patient, would have abundant employment while the independent, conscientious man with possibly more ability would be reduced to want or be compelled to change his calling. There would be no incentive for the employed man to try to improve his ability. The patient would suffer because his interest would be minor to the employer. He would be treated as a thing instead of an individual. He would be compelled to accept inferior services and could not seek superior skill in time of greatest need. The doctor's work would degenerate because of lack of competition and because the interest of his employer would be uppermost. The patient's interest would be jeopardized and he would suffer because he would have no choice of physicians. Some patients would abuse their privilege and call the doctor when there was no need for his services, and because he would be on a salary he would be obliged to go even if he knew they were malingering. Some thorough, conscientious physicians would work themselves to death with insufficient pay and others would do just as little as they could to get by, to the detriment of the patient. State medicine would react to the detriment of both physician and patient and the public health would be in danger.

To hold the respect and confidence of the public it is necessary that an average schedule of prices be formulated, that the people may know when they are being exploited and feel that the services they are receiving are at least partly actuated by a desire to relieve human suffering and not altogether from a mercenary motive. If we can work out a program that will save our independence, insure patients to receive adequate medical care at a reasonable price and give better care to the indigent with a more equitable division of the burden, then an ideal condition will be established and the demand for state medicine will have no foundation.

The following plan put into legislation would take away all excuse for socializing medicine and compulsory health insurance and would maintain the dignity and efficiency of the profession.

First: No contract practice should be allowed except where it can be shown that the isolation of such concern from competent medical care makes it necessary to employ a physician for such purpose.

Second: Each physician shall charge his usual fees and make collection, but after a period of six months, such fees shall be considered "past due." All past due medical fees should be collected by an officer who has power of levy and execution and should conform to an arranged fee schedule.

Third: All delinquent fees should be paid by county government according to a schedule arranged for indigent work.

Fourth: All these rules will apply to hospital and surgical care.

Some of the beneficial results that would accrue from such legislation would be as follows: To the physician—Restricting contract practice; eliminating list practice; maintaining voluntary service; preserving confidential relation between physician and patient; eliminating lay interference with medical practice; maintaining ethical competition and insuring every physician an equal opportunity; insuring ability and personality as the only measure of success; stimulating study to increase efficiency; eliminating the

sponge by requiring everyone to pay who is able; putting the burden of charity where it belongs and insuring the physician remuneration for his services. The advantages to the patient would be as follows: Free choice of physicians; any refinements in treatment and comfort that their means will admit; insurance of adequate treatment regardless of financial conditions; insurance of more adequate treatment through the increased efficiency of the profession; more privacy in relation to their health problems, and the retention of their self-respect by removing the temptation to malinger in order to get free treatment.

The greatest asset of a government is the health of its people and its greatest liability is the ill health of its citizens, and to maintain this health is a civic obligation that should be borne by each individual according to his financial relation to the civic whole. However, it seems to be the sentiment of the public that the physician should take care of the indigent, with no or very little remuneration, but it is unjust to require the physician to shoulder this civic obligation of maintaining the public health, except in his public relation as a citizen.

The profession does not ask for a subsidy, but it does want and deserve and the public will be best served by an equal application of the burden of the indigent to each taxpayer. I believe it will be wise and in keeping with the spirit of "service above self" that animates the profession, to compromise by adopting a schedule of fees for treating the indigent, that will be sufficiently low to discourage the occasional physician who might be tempted to make unnecessary calls and so boost his bill to the county.

The socialistic tendency of our present social order is to place the practice of medicine on a commercial basis rather than on the high ethical plane of a profession, and it is vital to our continued existence as a profession that we have enacted into law some plan that will enable us to maintain our independence and adopt the motto, "Let me live in a house by the side of the road and be a friend to man."

ACUTE POSTTRAUMATIC OSTEOPOROSIS*

By CLAUDE B. SMITH, M. D.
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THIS condition is one which has received considerable comment on the continent, but investigation of the literature shows that, in spite of its apparent frequency, it has had scant attention in this country. Historically, it seems to have been first described as a clinical entity by Sudech in 1900, who termed it posttraumatic reflex atrophy; Kienbock, and many others later, described various posttraumatic bone changes which now are more and more being gathered into one clinical entity. From the neurological side, Nonne in 1902, described similar bone changes associated with lesions of the peripheral nerves and a similar case was reported by Turner in 1924. The etiology of the condition is under question, that is, whether it is the direct result of trauma with subsequent changes due to the vascularity or trophicity of the bone, or whether the osteoporosis is the result of functional inactivity. It is this first theory that the bulk of the experimental and clinical work by Pillet, Brandes, Grey and Carr, and Allison and Brooks supports. The details of this work are beyond the scope of this paper.

Pathology: Grossly the condition presents a thin brittle cortex and a marked increase in adipose tissue in the medulla. Microscopical-

*Read before the Kanawha Medical Society, Charleston, W. Va., May 14, 1935.

ly, Vailleton found a marked diminution of both transverse and longitudinal striae, with lack of uniformity of the atrophy, the Haversian canals enlarged and the vessel walls thickened. Policard and Leriche have concluded that the changes present a uniform loss of bony substance and not merely a demineralization. Gordon has also recently described a condition, which he terms post-traumatic periarticular fibrosis, with a very similar clinical picture. The condition is described as a periarticular fibrosis, a result of the lymph stasis and edema subsequent to trauma and swelling.

Site and Frequency: The condition is most commonly found in the small bones of the hands and feet, although it has been reported in practically all bony parts. It most commonly follows fractures about the lower end of the tibia or tarsals or about the lower radius, ulna or carpals, but a review of the available literature failed to reveal any complete statistics, the largest series found being of 22 cases by Fontaine and Hermann, seen in Leriche's Clinic between 1924 and 1932, and seven cases by Buchaman of New York. Clinically only that form which is accompanied by pain and vasomotor symptoms is to be considered, this ruling out disuse atrophy. Then the diagnosis is to be made on these findings: (1) Pain persistent after the period of healing of the original trauma—such as fracture of the lower end of the tibia or of a carpal bone—both the pain and the loss of function being out of proportion to the trauma and local signs. This is also not relieved by immobilization in contradistinction to the pain due to trauma. Examination shows edema or puffiness of the extremity, with a cold, clammy, glossy condition. Heat either has no effect or makes the pain worse. Fontaine likewise points out the oscillometric and thermocouple tests are positive for arterial constriction. The following is an abstract of the case I wish to present to illustrate the foregoing:

Mrs. W. E. C., white, female, age 50 years. Admitted to hospital July 17, 1934. Chief complaint—pain and swelling of left ankle.

Present Illness: About thirty minutes prior to injury she had fallen, landing on left ankle, which immediately became swollen, tender and painful.

The past and family history was essentially negative.

Physical Examination: Obese white female. Left ankle swollen, marked tenderness over both malleoli. Pain on motion of ankle. B. P. 100/70. Otherwise essentially negative. X-ray on this date showed a fracture of both malleoli. External: No displacement. Internal: Displaced anterior.

Reduction closed. General anesthesia. Cast applied. July 19, 1934, position satisfactory.

Discharged July 22, 1934, up and about on crutches.

August 18, 1934: Cast removed. Union seemed fairly firm. Ankle only slightly swollen. Bandages, hot baths and massage at home. X-ray shows union but small piece of cartilage on lateral edge of injured bone. Malleolus projecting into joint. No evidence of bone resorption. Also was given daily physiotherapy (diathermy).

November 11, 1934: Detached piece of cartilage was removed at operation. Wound healed. P. P. and convalescence was uneventful. Pain in ankle relieved. Pain in foot persisted as did the puffiness, tenderness on pressure over the tarsals and metatarsals. Skin slightly glossy and cyanautic. These symptoms and signs persisted in spite of exercise and physiotherapy.

March 8, 1935: Symptoms have persisted to date. X-ray shows evidence of bone resorption, thinning of cortex and strial blurring of the joint margins.

On March 15, a periarterial sympathectomy was done, according to the technique of Leriche. Forty-eight hours later pain was almost entirely relieved. The foot was warm, the puffiness gradually disappeared, and in course of four weeks, the patient wore a shoe for the first time after the accident To date symptoms have not recurred.

X-ray findings may be divided into the, (1) early—with a mottled appearance of the bone due to irregular rarefied areas with varying thinning of the cortex and loss of outline of the individual bones. The lamella are ill-defined and fade into one another and (2) late—with finely drawn trabeculae, the outline of the bones may be seen but there is a given loss of density.

Prognosis: Opinions differ as to whether the condition is self-limited or not. However,

the preponderance of opinion seems to be that it goes on frequently to great chronicity, one case of 14 years duration being on record.

Treatment: The conservative treatment consists in the use of massage, baths and exercise which seem to be generally unsuccessful. Treatment directed to the improvement of circulation and by action on the sympathetic nerves either by periarterial sympathectomy or by the latter being reserved to the most extensive cases, seems to be largely successful. Use of the Paevex machine as reported by Reid, Shipley and Yeagar, seems useful both in prevention and treatment. Leriche has also recently reported the use of novocaine block of the lumbar chain as a means of treatment.

Conclusion: (1) Posttraumatic osteoporosis is a pathological entity which has received scant recognition in this country and is apparently more commonly found than diagnosed.

(2) Procedures directed against the sympathetic nerves constitute a successful form of treatment; in all, except in the most extensive, periarterial sympathectomy being sufficient to relieve the condition.

(3) The earlier the stage of treatment the quicker the response and less likelihood of residual changes.

BIBLIOGRAPHY

Buchaman: Ann. Surg.: 87. 892-910: June, 1928.
Gordon: Ann. Surg.: 99. 623-632: April. 1934.
Shipley and Yeager: 59: 480-485: September, 1934.
Leriche and Fontaine: La Presse Medicale: 42: 1844: November, 1934.
Fontaine and Hermann: Ann. Surg.: 97: 26-61: January, 1933.

A CASE OF FISTULA IN ANO WITH PILONIDAL SINUS*

By W. MERLE WARMAN, M. D.
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THIS evening I wish to bring the subject before you more in the nature of a presentation of an illustrative case than by a didactic method. All of us are confronted sooner or later with the problem of dealing with these conditions. It has been estimated that one-third of all rectal conditions are fistula, and it is certain that pilonidal sinus is not uncommon. The fact that this patient had the two conditions simultaneously is my reason for dealing with both subjects in one discussion.

Fistula in ano is a burrowing sinus which may or may not connect the skin with the interior of the anus. Anal fistulas may develop from a specific cause as cancer, tuberculosis, syphilis, or may be non-specific, or inflammatory.

Pilonidal sinus is one located over the sacrococcygeal region, and is sometimes termed a post anal sinus.

The popular theories regarding the development of pilonidal sinus are: (1) That it is primarily a malfusion of the neural canal, and (2) that it is primarily an invagination of the ectoderm. It is about four times as prevalent in males as in females.

The treatment of these conditions falls under the heading of minor surgery, yet, there are few minor or major surgical procedures in which the outcome is apt to be so distressing to both the surgeon and the patient—in fact the economic loss will frequently surpass that of many major surgical procedures. We have been accustomed to regarding them too lightly, and to paying too little attention to their problems and intricacies.

Case History: This patient, Mr. G. F., is 56 years of age. Middle ear infection as a child; pleurisy at 30 years of age; sciatica at 38 years of age; tonsils removed in 1933; has had hemorrhoids, and chronic constipation for several years; best weight, 185 pounds.

On October 16, 1934, he had pain and burning with swelling to the right of the rectum. A few days after this he had a discharge of pus from the anus. About two weeks later his physician made a

*Read before the Monongalia County Medical Society, August 6, 1935.

small incision in the abscess. Treatment then consisted of injection into the abscess of hydrogen peroxide, and some aluminum preparation. The infection did not subside, so on December 8, the patient was admitted to the hospital. On December 12, under evipal anesthesia a large abscess in the right ischiorectal region was incised. In the operative notes it was stated that a probe inserted in the abscess, did not enter the rectum. At this time an external hemorrhoid was excised and ligated.

The wound had not healed, so on February 5, under spinal anesthesia a fistulous tract to the left of the anus was excised. At this time the operative notes stated that the fistula opened about three and one-half inches inside the rectum. Two weeks later under nitrous oxide anesthesia, two ischiorectal abscesses were incised and drained. Three weeks later another incision of the ischiorectal abscess was done. Three weeks following this the wounds were still draining profusely, and the patient was again operated upon. This time the patient's incisions which were attempting to heal with soft granulations were reopened by blunt dissection with the gloved finger. One fistulous tract led into the rectum just above the external sphincter. Over a grooved director the sphincter was divided at right angles to its fibers. After one month the upper end of the incision was still discharging through a sinus tract extending down towards the sacrum.

Dr. Reid Edwards, Professor of Surgery at the University of Maryland, examined the patient while conducting a clinic at the hospital. It was his impression that there were two conditions present simultaneously in this patient; namely, a fistula in ano with an infected pilonidal sinus. It was his suggestion that a bloc dissection of the sinus be made, that the wound be packed open and two days later be given an exposure to the roentgen ray.

At this time the urine analysis was normal; red count, 4,075,000; hemoglobin, 75 per cent; Kahn, negative; x-ray teeth, negative; x-ray of sacrum and coccyx, negative. There were some overhanging skin flaps about the incisions previously made for the anal fistulas. It was Dr. Edward's suggestion that this overhanging tissue be excised. A few days later the patient was again operated upon.

This time the pilonidal sinus was injected with a mixture of 50 per cent methylene blue and hydrogen peroxide. The injection was made by inserting the tip of the Luer syringe into the mouth of the sinus, and constricting the edges of the skin about the tip of the syringe and making the injection under pressure holding the syringe in place for about five minutes to allow the dye to foam into the recesses of the sinus. A symmetrical bloc dissection was then made of the area, care being taken to stay wide of the tract as outlined by the dye. The dissection extended down to the fascia overlying the sacrococcygeal junction. The wound was then packed with dry gauze. Since it was impossible to sterilize this area no special attempt was made to clean the skin before operation, and no attempt was made to prevent infection following the operation. Two days postoperatively the packing was removed, and the wound was given an x-ray exposure to stimulate granulations. From then on he was given daily Sitz baths. The wound then went on to fairly rapid healing for the first time since the infection began, seven months previously.

Three weeks after the last operation, the patient was discharged from the hospital. Even though the wound has healed there is a broad scar resulting from the widespread infection, with the consequent destruction of tissue. He has some impairment of bowel control, and examination reveals the separation of the divided sphincter ends with a deep sulcus remaining in the course of their fibers.

Digital examination of the rectum reveals mild closing power of the internal sphincter, but practically none of the external muscle.

Treatment: Fistula — In the operative treatment of fistula in ano it is important to prevent deformity of the analsphincters with consequent impairment of their functions. It is necessary to localize carefully the internal opening as well as the various ramifications of the fistulous tracts. The latter are completely excised or incised and drained when the tracts extend deeply into the buttock. To remove the sources by which the fistulous tracts are maintained the overlying tissues must be completely severed. This includes the sphincters where the internal opening is above them either the external or the internal. It is generally stated that the external sphincter may be cut through with little disturbance in function provided the muscle is severed at right angles. It has been estimated that a properly functioning external sphincter maintains about 65 per cent of the closing tonus of the anus. When the external sphincter has been divided the fibers do not heal by direct

union, but the ends are replaced by scar tissue. If the scars are closely approximated, function should be good, but this approximation depends to a great extent on the duration of packing and on the severity of the infection present. All overhanging tissue should be removed in order that a flat scar may be formed. This will present an even surface for the remaining portion of the sphincter to contract against. Occasionally the resultant scar is irregular and distorted, and can not act as a suitable fixed point against which the sphincter may pull. The extensive operating necessary in these cases removes considerable tissue from the under surface of the sphincter. This deprives it of a certain amount of its fixation.

Pilonidal Sinus: A report given out from the Massachusetts General Hospital regarding the treatment of pilonidal sinus states that general anesthesia should be used in operating on these cases. There is no generally accepted method of treatment except that of radical excision. Preparation of the skin is relatively unimportant. Abscesses should be drained to clear up the sepsis as soon as possible before radical operation. Most writers feel that the sinus should be outlined with a dye, either an ethereal or hydrogen peroxide mixture with methylene blue.

Recurrence, of course, is the ultimate criterion on which success or failure is judged. In an attempt to obtain the shortest healing time possible we are often prone to attempt a primary suture following dissection of the sinus; however, results show that although the shortest healing times are found in the primary closure cases, so, also, are the longest, and the average time remains almost the same as in the ones with no closure at all. The lowest rate of recurrence is obtained by packing the wound open and the highest by partial closure.

A certain percentage of pilonidal sinuses can be cured by bloc dissection of the soft parts over the dorsum of the sacrum and coccyx. In cases of recurrence in which roentgen examination of the sinus tract injected with an opaque substance shows the tract to extend into the sacrococcygeal joint, a remnant of the sinus tract is probably contained within the joint, and cure requires removal of this remnant by excision of the coccyx.

Lahey suggests closing these wounds by moving a lateral flap to the midline and suturing it in place with the idea that it will form a soft movable scar instead of a fixed tender one.

One other treatment that has been advocated for pilonidal sinus is that of using a fixing fluid. According to Cutler, experiments have shown that ferric chloride carnoy fluid is the most efficacious sclerosing agent that can be used on living tissues. The formula for this fluid consists of:

1 gram ferric chloride. 6 cc. of absolute alcohol;
6 cc. of chloroform; 1 cc. of glacial acetic acid;

It produces rapid fixation with excellent hemostasis and causes less reaction in the surrounding tissue than formalin or Zenker's fluid. With this treatment the sinuses are exteriorized under local anesthesia and the fixative applied to the walls for an average of ten minutes. The next day the fixed tissue is curetted away, and the sclerosing agent reapplied until the wall of the sinus is entirely removed. The cavity is then packed, and allowed to fill from the bottom with granulation tissue.

Each of us has probably had some experience with this condition, and knows how difficult it occasionally is to cure. This case is another example of the value of prophylaxis in medicine. Early correction of lesions about his anus would doubtlessly have saved this patient six operative procedures, seven months' hospitalization, and over a year's disability, and loss of time. In our routine surgical examinations where hemorrhoids or dimpling of the sacrococcygeal region are found, we should recommend correction of the lesion, particularly in pilonidal sinus. If operation is done when no symptoms are shown, and before any secondary infection has developed a high percentage of primary union could be obtained. The results in the present case will bear me out that early operation is sound prophylaxis.

EARLY OXYGEN INJECTION OF JOINTS TO PREVENT ADHESIONS

(A New Procedure)

By E. BENNETTE HENSON, M. D.

Charleston, W. Va.

IN the February, 1930 issue of the WEST VIRGINIA MEDICAL JOURNAL, I presented a preliminary report on the use of oxygen or air injection of joints to break up adhesions. Six years have now elapsed since that report and the results have been satisfactory, as experience with its use has dictated improvements in its administration. No bad results have been obtained.

Several requests have come to me for the technique of injection, which will be given. Experience has shown that some joint capsules can be made to expand more than others with the same known pressure, therefore, for inflation start low, with not more than one or two pounds. Oxygen has replaced air because oxygen stimulates synovial secretion. A dry joint is no longer dry after oxygen injection. By frequent injections of acutely infective joints, the danger of dense adhesions is greatly lessened and many stiff joints may be prevented. I wish to present this to the profession as a new procedure, with the hope that others will try it. One merely insufflates acutely inflamed joints. In the chronic ones, inflate is the word that best describes the procedure. This difference must be borne in mind in using the technique here given.

Technique to Insufflate: Withdraw as much fluid as possible from the joint and then inject as much oxygen as the patient will tolerate. The patient should be given morphine prior to injection. Do not try to expand the capsule much. Pain is the guiding factor. (Use the apparatus described below.)

Technique for Inflation of Chronic Joints: The apparatus consists of a small oxygen tank upon which is placed a small oxygen pressure gauge of the Ohio Chemical Company. I have the company regulate it so that not more than two pounds is given. Then later you can have it increased. Then by an extra high tension rubber tubing a cheap fifty pound oxygen gauge used by commercial houses is attached by a rubber tubing to a Y and on the other limb of the Y rubber tubing is used as long as desired, upon which is placed a two-way stopcock for the fitting of the small gauge needle.

The pressure is tested so that on the first injection not more than two pounds is registered. This is done before the needle is inserted into the capsule of the joint. This is important to regulate so that you will know that you are getting no more than one or two pounds. Perhaps it would be best to start at one pound until you get accustomed to it. The needle is inserted into the knee joint just below the patella, trying to get a space between the bones, and the pressure is then turned on and it is stopped as soon as the patient complains of pain. While the needle is still inserted the oxygen is cut off and an x-ray made to get some idea of how much oxygen is actually within the capsule.

I prefer doing all this in the x-ray room with the patient all ready for the film. Oxygen will be absorbed within ten days and injections are done within this period and the pressure is gradually increased until five or six pounds is reached. Other well established methods of increasing motion are many times used in conjunction with the above.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Tuberculosis Among Negroes in the South: Briefly the deplorable situation in the Southern States comprising this Conference was made manifest through the following facts. The total population of the thirteen states represented is approximately 35,000,000 of which Negroes comprise approximately 10,000,000. While less than one-third the total population is colored, more than half of the deaths from tuberculosis are to be found among the Negroes, the average death rate from tuberculosis among Negroes being almost three times that among the whites. The Southern States comprising this Conference, possessing only sixteen per cent of the national wealth, must meet the needs, (social, economic and physical) of seventy-five per cent of the nation's Negro population.

The importance of environmental conditions, arising chiefly through ignorance, poverty, and neglect, was repeatedly stressed. The annual economic loss from tuberculosis deaths and morbidity among Negroes is very great.

The significance of occupational contacts was also emphasized and attention was called to the fact that through domestic and other personal services, approximately fifty per cent of the adolescent and adult colored population is brought into close touch with white children at their most susceptible age, thus providing perpetual seeding of a most fertile soil. Recent statistical studies were presented, revealing the significant fact that school children from the homes of those who employ Negro domestics show a much higher percentage of infection as revealed by tuberculin tests than those from the homes of people who live reasonably well but who are unable to employ domestic help.

It was shown that in spite of the high incidence, morbidity and death rate from tuberculosis in the Negro, there is a serious paucity of sanatorium beds for Negroes. The annual number of deaths from tuberculosis among Negroes in the South is approximately 11,000 with only 2,000 available sanatorium beds. The *deaths* among the whites approximate 10,000 with sanatorium facilities approaching one bed for every death. It was made obvious that poor housing, overcrowding in unhygienic surroundings, insufficient food, and the consequent massive infection among Negroes make sanatorium care imperative.

Diagnostic Difficulties: It was pointed out that early diagnosis is often more difficult in the Negro than in the white patient on account of certain racial and temperamental characteristics. There is often an utter disregard of mild or moderate symptoms, also a lack of information concerning the significance of symptoms when recognized. A sense of futility is often present and it is not uncommon to find a wilful attempt to conceal symptoms and to avoid examination. In some cases diagnosis is difficult because of certain variations, racial or environmental, in the clinical course of the disease where the characteristic symptomatology and pathology simulate acute non-tuberculous conditions.

The lack of general medical service was also stressed, revealing the startling fact that in some communities twenty-five per cent of the deaths among Negroes occur without medical attention.

Racial Susceptibility and Pathological Variations: Throughout the sessions, these debated questions were ever present with a heavy trend on the part of the clinicians toward environmental influences. However, as pointed out by the pathologists, it was found impossible to eliminate racial susceptibility with racial variations in clinical and pathological manifestations. As a consequence, the discussions arising at this meeting resulted in a happy blending of racial and environmental influences. The pathologists present generously acknowledged the influence of environment as a potent factor in the wide gap between the white and colored death rates, but at the same time they presented convincing evidence of racial or biological characteristics in the pathology of tuberculosis. Fortunately, the controversy left no one in doubt as to the importance of environment in our future programs for control of tuberculosis. At least environment is open to attack and subject to alteration.

Preventive and Therapeutic Measures: The obvious influence of ignorance and poverty upon the incidence, morbidity and death rate was stressed. The need of education was repeatedly emphasized, with stress upon the importance of health education in the schools and churches through public health agencies, with particular emphasis upon the work of the public health nurses. The need of trained colored physicians and colored public health nurses, with a discussion of ways and means of providing the same, received detailed consideration. Schools and special teaching clinics for the training of colored doctors and nurses for service in the prevention, diagnosis and treatment of tuberculosis were advocated. It was urged that training for Negro

doctors should include adequate provision for fundamental instruction of undergraduates in the epidemiology, diagnosis and treatment of tuberculosis in medical schools for Negroes, also intern and resident service for Negro doctors in sanatoria and in the tuberculosis wards in general hospitals.

Health education in Negro colleges was suggested as a means of preparing the way for general health education, since a large per cent of college graduates become school teachers. The desirability of providing racial leadership was emphasized. The character and quality of papers and discussions presented by colored doctors at this conference may be considered prophetic of future achievements along this line. The affiliated collateral meetings for colored people initiated at the Houston Conference also mark a resounding note of promise.

The question of sanatorium beds for Negroes was discussed and a committee appointed to pursue this need. The Burr Cottage, the screened porch, and other improvised home facilities were discussed in connection with home treatment. Artificial pneumothorax in ambulatory cases among Negroes was advocated as a public health measure and as being significant from an epidemiological standpoint.

Ultimate Conclusions: This meeting made obvious the necessity of squarely facing the tuberculosis problem among Negroes in the South, if we hope to make further progress in tuberculosis control as it concerns the population as a whole.

Both the medical and sociological phases of the problem received careful consideration. The program, throughout, was characterized by a frank expression of opinion. All questionable teachings and procedures were scrutinized with distrust, while all facts established by science and tried by experience were eagerly received. Through the discussions ran a coveted consciousness of the adequacy of medical science in the control of tuberculosis, saddened by an equal awareness of the inadequacy of its application to the problems of control. It was evident that the failure to meet social and economic needs stands prominently in the way of scientific progress.

The implications of lethargy and neglect rest upon the shoulders of both the professional and lay groups. It was agreed that there should be no passive moments; no resting on the oars, while waiting for better facilities. The resistant qualities of crass ignorance and superstition still found in the strongholds of poverty is like granite, and yields only to the perennial operation of elements which reach their destiny through gradual erosion.

The spirit characterizing true public health work was shown to be synonymous with genuine religion, and consists not in getting, but in giving.

The facts assembled seemed to warrant the conviction that the crusader against tuberculosis should wear a composite garment with medical science, common sense and measured sentiment as its chief components.

Pneumothorax in Lobar Pneumonia: In 1921 Friedman reported seven cases of lobar pneumonia treated by artificial pneumothorax, all of whom recovered without complications. The same year David reported a series of six cases with complete recovery. In 1928 a group of pediatricians reported 17 cases in children with three deaths and advised against this form of treatment mainly because most children recover from lobar pneumonia with the more conservative treatment. From time to time since then articles on the subject have appeared sporadically, but it was not until Lieberman and Leopold treated 18 dogs with unilateral pneumonia that this form of treatment was placed on a scientific basis. Three of the dogs died whereas of the 18 control dogs, 13 died. Stimulated by this work the authors studied the clinical value of pneumothorax in unilateral pneumonias at the Philadelphia General Hospital.

Effects of Collapse: The advantages of the procedure are two-fold. First, by separating the inflamed visceral and parietal layers of the pleura, pleural pain is relieved instantly. This allows for a slowing of the respiratory rate with deeper inspiration and better ventilation by the unaffected lung. Cyanosis diminishes or disappears. Second, the affected portion of the lung is compressed (as shown by autopsy and roentgenographically) and thus the blood flow in the affected lung is cut down. Lymphstasis probably helps reduce the toxemia. In many cases there is a rapid fall in temperature and pulse rate, with an increase in the sense of well-being. The blood pressure shows no marked variation. The leucocyte count falls rapidly after the fall in temperature and is most marked in that group of patients in whom a crisis is precipitated. In the vast majority of cases the febrile period is shortened and days of hospitalization are diminished. A definite crisis occurred in 19 cases within 48 hours after the initiation of pneumothorax therapy. In 18 cases the temperature came down by lysis. Four cases, all of whom were moribund at the time of air-

(Continued on page xxiv)

PRESIDENT'S PAGE

In this, my second monthly message to you, I shall touch upon some matters that may at first glance seem commonplace or even trite. Yet such qualities as honesty and integrity in men are also commonplace and trite, yet these are the most desirable qualities of the human race.

Recently I attended the annual conference of our county secretaries held at the Association headquarters in Charleston. I was tremenduously impressed with these men who guide the destinies of our component societies. For the most part they were young men or men in early middle age, who were entirely and completely devoted to the welfare of the medical profession of West Virginia. They are doing a hard work and doing it well. The county secretary is the heart and soul of his county society. It matters not so much who presides, but it matters greatly who the secretary is and how well he does his work.

The component society secretaries of West Virginia are an efficient, wide awake and intelligent group. I wish to commend them for the fine work they are doing and to incite them to further activities. They are fortunate indeed to have as State Secretary a man who is recognized as one of the topnotch secretaries of all states, namely, Mr. Joe W. Savage. I would say to the county secretaries, make full use of Mr. Savage and his office in carrying on your arduous duties.

To the members of our component societies, I wish to convey this thought. Whenever you are called upon to prepare a paper or to serve on a committee, do not hold back thinking that some other member might possibly do a better job. Give your society the best that is in you. In this way our local societies will flourish and, in the same measure, so will flourish our State and national organizations.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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ASSOCIATION FINANCE

From time to time in the past the JOURNAL has published a "breakdown" of the state dues to show just how the Association funds are expended. We have just completed the "breakdown" for 1935. Many Association members will undoubtedly be interested to learn what becomes of the $10 which they pay annually for Association membership. The figures below will show how the individual dues of each member were divided last year.

All salaries	$ 2.66
Journal	2.00
Legislative	1.07
Defense fund	1.00
Indigent fund	1.00
Office rent	.43
Stamps	.28
Travelling expense	.28
Miscellaneous	.26
Convention expense	.24
Supplies and equipment	.30
Stationery	.18
Telephone-telegraph	.14
Legal	.07
Savings	.09
Total	$10.00

In further regard to the state dues, many members are under the impression that they are not due and payable until April first. That impression is wrong. State dues are due and payable on January first of each year. The delinquent list of unpaid members does not become effective until April first, and unpaid members are carried in good standing until that date. In other words, every member has three months grace in which to take care of his annual dues. However, it will greatly simplify the work of your county secretary if you will send in your dues well in advance of the deadline.

NEW COMPENSATION LAW

During the first five months that the new West Virginia Compensation law was in effect there was an increase in payments for medical and hospital service of $40,577.14 over the same period in 1934, according to figures recently released by the compensation department. Disbursements for medical and hospital care from July 1 to December 1, 1934, amounted to $160,166.47. During the same period under the new law the total amount was $200,753.61.

The compensation department reports that there are still a few hospitals in southern West Virginia that are not taking advantage of the provisions of the new statute. When all of the hospitals and physicians do comply with the new law it is estimated that the increase in medical and hospital revenue will be well over one hundred thousand dollars per year. In answer to a question, the compensation department said that the increase already noted was due almost entirely to the new compensation statute and not to any increase in employment, which increase was negligible during the two periods above referred to.

It is somewhat astonishing to note that there are still some three or four hospitals that are not functioning under the new law. We understand from competent legal authority that these hospitals are needlessly subjecting themselves to civil action in various forms. But more strange even than this is their refusal to participate in a benefit that has been denied to hospitals and physicians alike for more than a decade. Whatever the increase in compensation payments, the amount of that increase represents what has heretofore been withheld under the old law for medical and hospital services. Now that the compensation department "must" pay for

compensible injuries, we are at a loss to understand why some few of our hospitals still fail to function under the new law.

To a certain degree we can understand the plight of the individual company doctor who does not file claims for services rendered injured employees. Many of these men are forced, under pain of dismissal, to ignore the provisions of the new compensation law. This is one of the serious problems now confronting the Association, but a problem which will soon be worked out.

The complete figures furnished by the compensation department are given below:

	1934	1935
July	$ 35,173.44	$ 35,864.55
August	25,460.00	40,804.48
September	28,843.76	37,662.32
October	39,100.42	43,446.81
November	31,588.85	42,975.45
Totals	$160,166.47	$200,753.61

SELECTION OF EMPLOYEES

"*.....Brother died where manhood's morning almost touches noon, and while the shadows still were falling towards the west.*"

This eulogy over a brother's grave may fittingly be applied to that ever increasing army of men who have attained that age in life where the shadows no longer fall toward the west. Industry has closed its gates to this great army and their orders are to "pass on."

The writer has before him two pieces of printed matter. Upon one is a graphic chart with red and blue lines. The red line indicates physical growth, the blue line mental growth. The red line rises to its peak at the age of 25 and then very gradually declines. The blue line has a slower rise and does not meet the red line until about the age of 47. The blue line continues its rise and the red line slowly goes downward. The other paper is an examination blank upon which is written "the policy of this company is to employ only those under the age of 45."

Let us assume that these two printed slips of paper are the result of mature thought and thorough investigation. What condition or conditions have come about to cause industry to close its doors to men of the age of 40 or 45 when by their experience, training and higher mental development as well as increased stability would lead one to believe them invaluable? From what source has industry drawn its information? Did the enactment of our first social insurance laws start the change? What will be the end result of our new social insurance setup? What part has the physician played in the change?

In any study of the problem one cannot escape the close relationship between the law of compensation for injuries on the one hand and the selection of employees on the other. The originators of the compensation idea probably did not comprehend that such would follow; neither can the originators of the newer social legislation imagine what the end result may be. Did anyone thirty years ago imagine that insurance companies would write mass insurance based on the average age of employees?

The writer has always held to the belief that the individual is dependent (at least in America) upon one of two classes for aid. One we call society and the other we call industry. Society has its obligation to the individual and in turn the individual is obligated to society. Industry also has its obligation to the individual and society.

How can these obligations be clearly defined? When should the individual look to society for aid and when should aid from industry be sought? The inability to clearly define the obligation of industry and the obligation of society as related to the individual is graphically illustrated in following the decisions handed down in such conditions as Buergers disease, loss of one eye where the other is gone, the age factor, et cetera.

Upon the medical profession in most instances rests the responsibility of passing final opinion on the disability involved and have we unwittingly started the march of this great army of the unemployables whose shadows are falling toward the east? E.B.H.

LICENSING DOCTORS

At the Conference of County Secretaries held at the Association headquarters in Charleston on January 7, a suggestion was made to the West Virginia Public Health Council that close scrutiny be made of the papers and credentials of graduates from foreign medical schools. This suggestion resulted from a discussion of unlicensed practitioners in the state when it developed that many of the most flagrant offenders claimed graduation from foreign schools.

During the tenure of the present Public Health Council, and for some years before, unusual care has been manifested in the examination and investigation of foreign credentials. As a result, a number of charlatans have been summarily disposed of whose credentials proved worthless upon investigation. The fact that the Public Health Council has exercised unusual caution in this regard is a guarantee in itself that this policy will continue. The suggestion of the county secretaries, therefore, has reached understanding ears.

Not all the responsibility for licensure in West Virginia rests upon the Public Health Council. A part of the responsibility rests upon each individual physician in the state, and particularly upon those who hold office in their county societies.

Many doctors who receive West Virginia licenses first come into the state on locum tenens or to assist some physician who is already established. After a brief stay, they like the state and decide to locate here permanently. Then they apply for licensure, either by examination or reciprocity. The Public Health Council may scan their credentials for months without learning anything about the practical ability, the character, the habits or the integrity of the applicants. This latter information can only be obtained from the individual doctors in the counties where the applicants were first located.

We understand that during the past six years the Public Health Council has never received any suggestions or advice from any physician in the state relative to the prospective licensing of an applicant. We mention this for the purpose of requesting our members to closely observe these outsiders who come into West Virginia on temporary assignments, and to get in touch with the Public Health Council if and when they feel that such men are not desirable. Coöperation of this nature would be invaluable to the Public Health Council.

Fortunately most of the applicants for licensure in West Virginia are honest and industrious young men who are just through their interne period. Their credentials and qualifications are usually above reproach. The Public Health Council has no difficulty with this type. It is the occasional "drifter" who works in first one place and then another, and who finally applies for license, that presents a problem for our licensing board. It is with this type that our individual members can be of great assistance.

CORRECTION

In the Hospital Number of The West Virginia Medical Journal, published in November, there appeared a complete roster of West Virginia hospitals prepared by the Hospital Association of West Virginia. Information concerning the various hospitals was obtained from questionnaires which were filled out by the hospitals and sent in to the Hospital Association. This information was then tabulated and turned over to the Journal for publication.

In this roster it was indicated that nurses training schools approved by the West Virginia Examining Board for Nurses were maintained by the General Hospital of Weston, the Monongalia County Hospital at Morgantown, and the Princeton Hospital at Princeton.

The Journal is in receipt of a communication from the West Virginia Board of Examiners for Nurses setting forth that "Monongalia County Hospital, Princeton Hospital and the General Hospital of Weston do not have accredited schools of nursing."

The Journal is extremely sorry to have published this error.

OBITUARIES

DR. JOHN W. BOSWORTH

"Well done, thou good and faithful servant!"

On January 3, 1936, Dr. John Woodbridge Bosworth of Philippi, an honorary member of the West Virginia State Medical Association and one of the 10 oldest physicians in the United States, died at the age of 99 years. He began the practice of medicine at Philippi in 1868, one year before the formation of the Association, and continued in active practice until about five years ago.

Dr. Bosworth was born at Beverly, Virginia, (now West Virginia) on September 3, 1836, the son of Dr. Squire Bosworth. At the age of 17 he was appointed as a cadet to the Virginia Military Academy by Thomas J. "Stonewall" Jackson and graduated there on July 4, 1857. During this period he was a member of a number of the classes taught by General Jackson. At the time of his death, Dr. Bosworth was the oldest living alumnus of the school.

DR. J. W. BOSWORTH, 99

Following graduation, Dr. Bosworth entered Jefferson Medical School in Philadelphia where he was a student until the outbreak of the Civil War. He then joined the Confederate Army and served four years as Lieutenant in the 31st Virginia regiment. Shortly before the war closed, Dr. Bosworth was wounded and captured near Petersburg, Virginia, and was placed in Fort Delaware prison for six months before his release. He then returned home and in 1866 married Miss Martha E. Dold, daughter of the late Dr. and Mrs. Addison Dold of Fishersville, Virginia. His wife died in 1930.

He began the practice of medicine at Philippi in 1868 where he served the people of Barbour and surrounding counteis for more than 60 years. Although modest and unassuming, no call to duty went unheeded when it was physically possible for him to attend.

Dr. Bosworth was a member of the Philippi Presbyterian church and for a number of years was one of the ruling elders. He was an active member of the Odd Fellows for more than 50 years and a surgeon for the Baltimore and Ohio Railroad. He joined the Barbour-Randolph-Tucker Medical Society shortly after its formation and continued his membership until his death.

On September 3, 1935, the members of the Barbour-Randolph-Tucker society held a special dinner meeting at Philippi in honor of the ninety-ninth birthday of Dr. Bosworth. This meeting received national recognition, due to the age and the lifetime of service of the honor guest.

Dr. Bosworth is survived by one daughter who is the wife of Dr. C. B. Williams of Philippi. One grandson and one great granddaughter also survive.

DR. ALEXANDER IRVINE

Dr. Alexander Irvine, 73, one of the most widely known physicians of McDowell county, died on the evening of January 14 at his home in McDowell township. He had been in poor health for some time but his condition was not regarded as serious, until he suffered a heart attack and lived but a few minutes.

Dr. Irvine was graduated from the Medical College of Virginia at Richmond in 1887 and was licensed in West Virginia in 1898. From that time until his death he practiced in the Pocahontas coal fields. He practiced for several years at Bramwell and later opened and was in charge of the Welch hospital. Prior to his residence in McDowell county, Dr. Irvine was in charge of the Sheltering Arms Hospital near Montgomery.

In recognition for his many years of service to the medical profession, the McDowell County Medical Society several years ago elected him as an honorary member. Dr. Irvine was also a member of

the West Virginia State Medical Association and the American Medical Association. He is survived by his widow.

DR. WILLIAM B. RICHARDSON

Dr. William B. Richardson, 45 years of age, died suddenly at his home in Parkersburg early on the morning of New Years Day, 1936. Coronary occlusion was the cause of death. Dr. Richardson had not been ill, although he complained of a slight discomfort shortly before retiring.

Dr. Richardson was born at Parkersburg on November 13, 1890, and received his early education there. In 1914 he graduated from the University of Maryland College of Physicians and Surgeons, Baltimore, and was licensed to practice medicine in West Virginia the same year. He spent one year as an interne at St. Joseph's Hospital, Lancaster, Pennsylvania and then returned to Parkersburg where he entered the private practice of medicine.

In the death of Dr. Richardson, Parkersburg lost one of its most prominent and active citizens and the medical profession lost one of its most loyal and devoted members. Dr. Richardson served as both secretary and president of the Academy of Medicine of Parkersburg and for a number of years was the Parkersburg school physician.

During the World War, Dr. Richardson served as 1st Lieutenant at Langley Field, Virginia. He was a member of the Forty and Eight and the American Legion, a Knight Templar and was active in the Parkersburg Kiwanis Club.

DR. DANIEL C. LOUCHERY

Daniel Carson Louchery, Clarksburg, West Virginia, Medical Department, University of Maryland, 1881; for many years a devoted worker in organized medicine, one of the original members of the Harrison County Medical Society, member of the West Virginia State Medical Association, American Medical Association, the Academy of Ophthalmology and Otolaryngology of the American Ophthalmological Society and of similar specialistic bodies, died at his home, January 3, 1936, at the advanced age of ninety years.

Prior to receiving his medical degree Doctor Louchery was a teacher of distinction, serving for several years as superintendent of the Clarksburg public schools. During Doctor Louchery's active practice of his specialty—eye, ear, nose and throat, he was a local surgeon for the Baltimore and Ohio Railroad Company. At the time of his death he was the oldest member of the Association of Baltimore and Ohio Railroad Surgeons. He was for many years a member of the staff of the St. Marys Hospital, Clarksburg, West Virginia. In his death the medical profession of West Virginia lost a wise and experienced counsellor and those who knew him well and were associated with him, a loyal friend.

DR. BERNARD P. GARRED

Dr. Bernard Pogue Garred, 80 years of age, died of a heart attack at his home in Charleston on January 19. He was born at Louisa, Kentucky, on April 23, 1856, received his medical education at the College of Physicians and Surgeons, Baltimore, and had been in continuous practice for 52 years at the time of his death.

He is survived by his widow, four sons and two daughters. One son, Dr. H. W. D. Garred, is a practicing physician in Charleston.

DR. JOHN R. BOYD

Dr. John R. Boyd, widely known Mercer county physician, died at his home at Oakvale on the morning of January 20, 1936, at the age of 70 years. Death was attributed to a heart attack. Dr. Boyd was born at Oakvale on March 11, 1865 and was physician and surgeon of the Norfolk and Western Railroad for almost half a century.

After receiving his preparatory education at the Concord State Normal school, Dr. Boyd was graduated from the College of Physicians and Surgeons, Baltimore, in 1893. He received his West Virginia license the same year and began practice at Oakvale. In 1911 he was elected mayor of the town and served continuously in that capacity until his death. Prior to his election as mayor, Dr. Boyd served one term as justice of the peace.

The deceased became a member of the Mercer County Medical Society and the State Association in 1905 and carried his membership until his death. He was also a Fellow of the American Medical Association. For more than 35 years he was a member of both the Masonic order and the Odd Fellows.

Commenting on his death, the *Bluefield Daily Telegraph* said, "In the passing of Dr. Boyd the county loses one of its esteemed citizens and one of the few remaining old country doctors."

COUNTY SOCIETY NEWS

BARBOUR-RANDOLPH-TUCKER

Dr. J. L. Miller, Thomas, was elected president of the Barbour-Randolph-Tucker County Medical Society at the regular annual meeting, held January 2 at Elkins. Other officers elected for 1936 were: Doctors C. B. Williams, Philippi, and Dr. H. K. Owens, Elkins, vice president, and Dr. Russell Wolfe (reelected), secretary-treasurer.

The Barbour-Randolph-Tucker Society accepted Dr. J. L. Woodford, Philippi, and Dr. S. Weisman, Parsons, as new members, and elected to honorary membership Dr. E. M. Hamilton, Belington, and Dr. A. P. Butt, Sr., Elkins.

Dr. S. P. Perry of the x-ray department, University of Chicago, was the guest lecturer at the meeting held on January 2, and presented a paper on "Modern Concepts of Irradiation Therapy."

DR. RUSSELL S. WOLFE, *Secretary*.

CABELL COUNTY

"Psychosis With Somatic Diseases," was the subject of a paper presented by Dr. Edward F. Reaser of the Huntington State Hospital at the regular monthly meeting of the Cabell County Medical Society, January 9, at Huntington. The discussion was led by Dr. Richard B. Easley.

The Cabell county society has elected as its delegates and alternates to the annual meeting of the West Virginia State Medical Association in Fairmont the following:

Delegates—Doctors Raymond Sloan, R. M. Wylie, Oscar Biern, Boyd Brown, and C. B. Wright; alternates—F. C. Hodges, W. F. Beckner, R. M. Bobbitt, and George Lyons.

The Medical Review Society of Huntington held its sixth annual Claude A. Latham Memorial Lecture session, beginning at 8:15 p. m., Thursday, January 23, at the Hotel Governor Cabell, Huntington, with Dr. M. A. Blankenhorn, Cincinnati, Ohio, as the guest speaker.

The sixth annual Claude A. Latham Memorial lecture was presented by the Medical Review Society at Huntington on the evening of January 23, with Dr. M. A. Blankenhorn of Cincinnati as the guest speaker.

C. B. WRIGHT, *Secretary*.

CENTRAL WEST VIRGINIA

The next meeting of the Central West Virginia Medical Society will be held in the Rotary meeting rooms in Sutton on February 27, beginning with a dinner for the doctors and their wives at 6:15 o'clock. A special invitation is being sent to the members of the Lewis County Medical Society to be the guests of the Central West Virginia Society at the Sutton meeting.

Essayists of the evening will be Dr. William B. Morrison, Dr. Frank Harrah and Dr. Samuel Edelman, all of Columbus, Ohio. Dr. Morrison will speak on "Carcinoma of the Stomach and Intestines." Dr. Harrah's subject will be "Transresection of the Prostate," and Dr. Edelman will speak on "Pediatrics."

EUGENE S. BROWN, *Secretary*.

EASTERN PANHANDLE

In addition to having Dr. Franklin Reeder, director of the Department of Vital Statistics of the West Virginia State Department of Health, as guest speaker, the Eastern Panhandle Medical Society elected the following new officers at its regular quarterly meeting, December 11, 1935, at Martinsburg:

President, Dr. Halvard Wanger, Shepherdstown; first vice president, Dr. E. H. Bitner, Martinsburg; second vice president, Dr. A. B. Eagle, Martinsburg; secretary-treasurer, Dr. Edwin Cameron, Martinsburg; and member of the Board of Censors, Dr. R. B. Talbott, Martinsburg.

EDWIN CAMERON, *Secretary*.

FAYETTE COUNTY

Dr. P. E. Prillaman, Oak Hill, was elected president of the Fayette County Medical Society at the annual meeting held December 17, 1935, at Oak Hill. Other officers elected were:

First vice president, Dr. G. G. Hodges, Kilsythe; second vice president, Dr. W. E. Bundy, Minden; secretary-treasurer, Dr. W. D. Simmons, Glen Ferris; members of the Board of Censors—Doctors W. R. Laird, Montgomery; S. W. Price, Scarbro, and F. S. Harkleroad, Harvey.

Dr. M. I. Mendeloff, Charleston, was the guest lecturer at the scientific program which followed the business meeting, presenting a paper on "Treatment of Coronary Occlusion."

RALPH HOGSHEAD, *Secretary*.

HARRISON COUNTY

"The Management of Pneumonia," supplemented by motion picture demonstrations, was the subject of a lecture presented by Dr. Murray Fer-

berber, Pittsburgh, Pennsylvania, at the regular January meeting of the Harrison County Medical Society, January 2, at Clarksburg.

Another paper on the subject: "Middle Ear Infection," was presented by Dr. I. D. Cole, Clarksburg.

The meeting was preceded by a six o'clock dinner.

C. C. Greer, *Secretary*.

HANCOCK COUNTY

Dr. J. E. Richmond of Weirton was elected president of the Hancock County Medical Society at the regular monthly meeting held on the evening of January 8. Dr. Richmond succeeds Dr. C. A. Shafer of Chester who served as president of the society for the past two years. Dr. L. A. Whitaker of Weirton was reelected secretary-treasurer.

L. A. Whitaker, *Secretary*.

KANAWHA COUNTY

Dr. Ray Kessel of Charleston was installed as president of the Kanawha Medical Society at the annual dinner meeting of the society held at the Daniel Boone Hotel on the evening of January 7. Dr. Kessel succeeds Dr. Ray M. Bobbitt, who served during 1935.

Other officers installed at the meeting held on January 7 were Dr. A. W. Milhoan, Nitro, vice president; Dr. P. A. Haley, II, Charleston, secretary-treasurer, and Dr. B. H. Swint, Charleston, member of the Board of Censors.

The members of the ladies' Auxiliary were guests of the society at the dinner and dance which followed, as were Dr. C. G. Morgan, state president of the Association, and the component society secretaries in attendance at their annual conference which was held at the Association headquarters in Charleston on the morning and afternoon of January 7.

The Journal Club of Charleston met in the Association library on the evening of January 20 with a good attendance. Abstracts were presented by Dr. T. M. Barber on "Endocrine Therapy," and by Dr. G. H. Barksdale on "Mild Hypothyroidism."

P. A. Haley, II, *Secretary*.

LEWIS COUNTY

Dr. R. J. Condry, Elkins, speaking on "Heart Disease," was the guest lecturer at the regular November meeting of the Lewis County Medical Society.

In cooperation with the Lewis County Court and the Lewis County Board of Education, the County Medical Society is completing an immunization campaign against diphtheria, typhoid and smallpox. The campaign was started during the month of September.

Dr. E. T. W. Hall, Lewis county's oldest practicing surgeon, who has been seriously ill, is now convalescing. Dr. A. F. Lawson has returned from the American College of Surgeons convention in San Francisco.

Dr. Ralph M. Fisher of Weston was elected president of the Lewis County Medical Society at the regular monthly meeting held in Weston on the evening of January 13. He succeeds Dr. G. C. Corder of Jane Lew who served during 1935. Dr. Robert White of Hurst was elected vice president and Dr. Theresa O. Snaith, Weston, was reelected secretary-treasurer. Dr. O. L. Hudkins, Weston, was elected for the three year term on the Board of Censors.

Theresa O. Snaith, *Secretary*.

McDOWELL COUNTY

Discussing "Hypertrophy of Prostate," Dr. C. J. Reynolds, Bluefield, was the guest speaker at the regular monthly meeting of the McDowell County Medical Society, held January 15, in Welch.

The society accepted as new members Dr. E. T. Cecil, Berwind, and Dr. C. L. Woodbridge, Welch. Dr. Woodbridge was transferred from the Clark County (Kentucky) Medical Society.

R. H. Edwards, *Secretary*.

MARSHALL COUNTY

Dr. H. B. Ashworth of Moundsville was elected president of the Marshall County Medical Society at the last regular meeting held at the Moundsville Elks Club on the afternoon of January 21. Dr. Ashworth succeeds Dr. C. G. Morgan. Dr. H. S. Parker, McMechen, was elected vice president and Dr. J. A. Striebich was reelected secretary-treasurer.

Members of the Board of Censors elected at the January 21 meeting were Dr. O. P. Wilson, Dr. J. C. Polk and Dr. H. S. Parker. The next meeting of the society will be held at Moundsville on February 10.

J. A. Striebich, *Secretary*.

MARION COUNTY

The Marion County Medical Society had as its guest speaker at the October 30 meeting, Dr. Wm. F. Rienhoff, Baltimore, Md., who presented a paper on "Thoracic Surgery."

Two surgeons from the Cleveland Clinic, Doctors Alexander T. Bunts, and R. S. Dinsmore, were guest speakers at the tri-county meeting (Monongalia, Harrison and Marion county societies) held November 26 in Fairmont. Dr. Bunts spoke on "Spinal Cord Tumors," and Dr. Dinsmore on "Thyroid Disease."

Doctors John P. Helmick and Joseph T. Mallamo were accepted as members of the Marion society by reciprocity, and Dr. Clyde Watson of Jordan was elected to membership. Dr. Helmick has recently opened offices in this city.

A. H. STEVENS, *Secretary.*

MONONGALIA COUNTY

Dr. S. F. Talbott of Morgantown was elected president of the Monongalia County Medical Society at the annual meeting held at the Hotel Morgan on the evening of December 3. Dr. C. B. Pride was elected vice president; Dr. G. R. Maxwell was reelected secretary, and Dr. L. W. Cobun was elected treasurer. Dr. B. C. John was elected for the three year term on the Board of Censors.

Delegates to the state meeting at Fairmont next June 8, 9 and 10 were elected as follows: Dr. C. B. Wylie and Dr. E. F. Heiskell. Alternates were Dr. R. W. Fisher and Dr. W. Merle Warman. The meeting was preceded by a dinner at six o'clock.

Dr. L. D. Norris of Fairmont was the essayist at the January 7 meeting of the Monongalia society which opened with a dinner at six o'clock at the Hotel Morgan. Dr. Norris' subject was "The Medical Anesthetist as an Aid to the Surgeon and Internist" which was well presented and liberally discussed by the members present.

G. R. MAXWELL, *Secretary.*

OHIO COUNTY

Dr. James H. Mendel, a native of Wheeling, but now a member of the faculty of Jefferson Medical College, was the guest speaker at the sixth regular scientific meeting of the Ohio County Medical Society, December 13, 1935. Dr. Mendel lectured on diseases of the ear and illustrated his lecture with an exhibit on middle ear pathology for which he had been awarded a bronze medal at the American Medical Association convention in Atlantic City last June. Following his lecture Dr. Mendel was elected to honorary membership by the society.

The seventh regular meeting, held December 20, was featured by a lecture on "The Medical Treatment of Arthritis," by Dr. Wm. S. Middleton, dean of the medical school of the University of Wisconsin.

"The Relation of Endocrinology to Gynocology" was the subject of a lecture by Dr. Emil Novak, Baltimore, Md., guest speaker at the January 10 meeting of the society, at which 110 members and guests were in attendance.

All of the above meetings were held in the solarium of the Ohio Valley General Hospital, Wheeling.

W. M. SHEPPE, *Secretary.*

PARKERSBURG ACADEMY

The Academy of Medicine of Parkersburg, regularly scheduled to meet January 2, did not hold its January meeting until the ninth, postponement having been ordered by the president in deference to the late Doctor William B. Richardson, member of the Academy, who expired January 1, last. At the January 9 meeting, the secretary was instructed to prepare a resolution expressing the Academy's sympathy and regrets.

Dr. A. Morgan Dearman's paper on "The Elliott Hot Water Treatment; a Clinical Study of a Series of Cases," was the feature of the scientific program at the January 9 meeting.

BERLIN B. NICHOLSON, *Secretary.*

RALEIGH COUNTY

The regular bi-monthly meeting of the Raleigh County Medical Society was held in Beckley on the evening of January 16 with 23 members in attendance. Dr. W. W. Hume, Beckley, was elected president for the ensuing year, succeeding Dr. A. G. Bowles of Glen White. Dr. S. A. Ford, of Edwight, and Dr. R. P. Daniel, Pemberton, were elected vice presidents, and Dr. L. M. Halloran, Beckley, was reelected secretary-treasurer.

Members of the Board of Censors elected were Dr. E. S. Dupuy and Dr. R. G. Broaddus, Beckley, and Dr. M. C. Banks, Raleigh. Delegates elected to the state meeting at Fairmont were Dr. E. H. Hedrick and Dr. D. C. Ashton, Beckley. Alternates were Dr. R. P. Daniel, Pemberton, and Dr. K. M. Jarrell, Beckley.

Dr. D. C. Ashton, Dr. R. G. Broaddus and Dr. L. G. Houser, all of Beckley, were appointed as the 1936 program committee.

Dr. Clark Kessel of Beckley was accepted as a new member of the society.

The society agreed to conduct 10 meetings dur-

ing the coming year instead of following the bi-monthly plan heretofore observed.

L. M. Halloran, *Secretary.*

TYLER-WETZEL

Dr. John O. Theiss of New Martinsville was elected president of the Tyler-Wetzel County Medical Society at the January 14 meeting held in the War Memorial Building in New Martinsville. Dr. Theiss succeeds Dr. A. L. Coffield. Other officers elected were Dr. Gene M. Harsha, Sistersville, vice president, and Dr. L. P. Stanley, Pine Grove, secretary.

Dr. E. C. Blum and Dr. C. K. Weir, both of New Martinsville, were elected to membership at the January 14 meeting.

T. B. Gordon, *Secretary.*

POST GRADUATE INSTITUTE

A Post Graduate Institute, offering an intensive and interesting study of the newer work in the field of cardiovascular and renal diseases, will be conducted by the Philadelphia County Medical Society during the week of April 20 to 24, inclusive.

The program, to be held in the Bellevue-Stratford Hotel, Philadelphia, has been designed to meet the needs of all members of the profession, but particularly those in general practice. Physicians from all parts of the eastern and east-central United States are invited to attend.

Lecturers, about 30 in number, have been selected from among the foremost teachers in this great center of medical education. The medical faculties of the University of Pennsylvania, Jefferson, Temple, and Woman's Medical College of Pennsylvania, are represented on the program. While approaching the subject from specialized viewpoints—those of the physiologist, cardiologist, pediatrician, surgeon, roentgenologist, bacteriologist, internist—the presentations will be of a strictly practical nature, and should be of real value to the general physician, who finds cardiorenal conditions occupying a large proportion of his time.

The Philadelphia County Medical Society, in conducting the Post Graduate Institute, is meeting the demands of many physicians who have felt the organized profession should provide them with this type of opportunity for keeping abreast of medical progress and thus maintaining the highest standards of medical service. The only charge is $5.00 registration fee to cover the Institute's expenses. It is hoped to make the event an annual one, giving special attention each year to a different subject.

GENERAL NEWS

CONFERENCE OF SECRETARIES

The Annual Conference of Component Society Secretaries of the West Virginia State Medical Association was held at the Association headquarters in Charleston on January 7 with an excellent program and a splendid attendance. The conference got under way at 10 o'clock A. M., and adjourned shortly after four o'clock that afternoon. Many of the secretaries, accompanied by their wives, remained over that evening for the annual dinner dance of the Kanawha Medical Society.

The conference was called to order by Mr. Joe W. Savage, state secretary, and Dr. A. H. Stevens of the Marion society was selected as chairman. Dr. C. G. Morgan, Moundsville, president of the Association, then opened the program with a brief talk on the work of the coming year. Dr. Morgan spoke of past Association achievements and outlined the plans of his own administration for 1936.

Dr. W. W. Strange, Huntington, gave an instructive report on the experience of the Cabell County Medical Society in ridding that county of unlicensed practitioners of medicine. Dr. Raymond Sloan, Huntington, opened the discussion of Dr. Strange's report. Both Dr. Strange and Dr. Sloan gave a clear and precise outline of the procedure followed by the Cabell society in securing injunctions against unlicensed doctors.

The morning program was concluded with an address on "Infant and Maternal Welfare" by Dr. Andrew E. Amick, Charleston, chairman of the Association committee on infant welfare. Dr. Amick produced statistics to show the need for better obstetrics and treatment of children in West Virginia, and outlined the work which his committee will undertake during the present year.

During the noon recess, the secretaries were guests of the Association at a luncheon at the Daniel Boone Hotel. Dr. R. H. Walker, Association Council chairman, opened the afternoon program with a talk on "The Corporate Practice of Medicine" in which he outlined many of the abuses in West Virginia and the method for correcting such abuses. He was followed by Dr. W. M. Sheppe of the Ohio County Medical Society with a splendid, practical paper on "County Society Programs and Activities." Dr. Ward Wylie, member of the West Virginia legislature and secretary of the Wyoming society, concluded the program with an appeal to the county secretaries for their support and coöpera-

tion in promoting the legislative program sponsored by the Association. He pointed out many of the legislative pitfalls and showed how the Association's legislative objectives could be jeopardized and ruined through lack of support from the component societies and their officers.

Two county society presidents were present at the conference: Dr. J. B. Clinton of the Marion society and Dr. L. F. Boland of the Mingo society. Other visitors included Dr. Morgan, Dr. Walker, Dr. Strange, Dr. Sloan and Dr. Thomas Blake of the State Health Department.

County secretaries in attendance included Dr. Stevens of the Marion society, Dr. Wylie of the Wyoming society, Dr. Russell S. Wolfe of the Barbour-Randolph-Tucker society, Dr. George W. Easley of the Mingo society, Dr. Paul R. Wilson of the Grant-Hardy-Hampshire-Mineral society, Dr. Eugene S. Brown of the Central West Virginia society, Dr. Berlin B. Nicholson of the Parkersburg Academy of Medicine, Dr. A. G. Lanham of Greenbrier Valley society, Dr. W. M. Sheppe of the Ohio society, Dr. C. B. Wright of the Cabell society, Dr. D. T. Moore of the Logan society, Dr. J. A. Striebich of the Marshall society, Dr. L. M. Halloran of the Raleigh society, Dr. W. D. Simmons of the Fayette society and Dr. P. A. Haley, II, of the Kanawha society.

THE STATE MEETING

The sixty-ninth annual meeting of the West Virginia State Medical Association will be held at Fairmont on June 8, 9 and 10, 1936. The scientific program for the general sessions has been practically completed by the program committee, headed by Dr. Ivan Fawcett of Wheeling, and a number of nationally known speakers have accepted invitations to appear.

The doctors of Fairmont and Marion county have already started work on convention plans with Dr. Amos H. Stevens, secretary, as chairman of the general convention committee. Arrangements are now being worked out for the official unveiling and dedication of the Founders' Monument at Rivesville, which will be one of the features of the Fairmont session. Convention headquarters will be at the Fairmont Hotel where all of the general and sectional meetings will be held.

Among the prominent out-of-state speakers who will appear on the Fairmont program will be Dr. Lawrence Royster of the University of Virginia, Dr. Frank Lahey of Boston, Dr. Arthur M. Fishberg of New York City, Dr. Warren T. Vaughan of Richmond and Dr. George A. Ulrich of Philadelphia. The Oration on Medicine will be delivered by Dr. F. C. Hodges, Huntington, and the Oration on Surgery by Dr. Russell B. Bailey, Wheeling.

DEATHS IN WEST VIRGINIA

Of the two hundred causes of deaths listed by the United States bureau of census, diseases of the circulatory system lead in the 17,952 deaths occurring in West Virginia in 1934. Dr. Franklin Reeder, acting director of the division of Vital Statistics of the State Health Department, stated this was the largest number of deaths reported in the state since 1930. The majority of deaths occurring from diseases of the circulatory system were of persons over sixty-five years of age.

The second highest cause of death was from the infectious and parasitic diseases. From 1930 to 1934 diseases of this nature were the highest in the state, with tuberculosis and influenza leading as the two principal causes. The fact that whooping cough, a common and seldom-feared childhood disease, was third in the fatality list of infectious diseases is surprising. The number of fatal cases of this disease has been steadily rising over the past three years.

Alarming also is the increase in the number of deaths from cancer in West Virginia. Because of this health authorities continue to stress the value of the annual physical examination, which may reveal cancer in its early stages when it can be cured.

Dr. Reeder stated that the five principal causes of death in West Virginia in 1934, exclusive of the two highest mentioned above, were diseases of the nervous system, which include cerebral hemorrhage and epilepsy; violent and accidental deaths, which include suicide, homicide and accidents of various kinds; diseases of the respiratory system, such as bronchitis and pneumonia; diseases of the digestive system, such as ulcer of stomach and appendicitis; and malformation and diseases of early infancy, such as premature birth and injury at birth.

Infant deaths in the state total 2,786, with Wyoming county having the highest percentage of deaths, and Ritchie county the lowest percentage. Principal causes of infant deaths were diarrhea, respiratory and infectious diseases. The number of deaths from diarrhea showed a marked decline during the past two years due to the state-wide sanitation plan and the health education program which has been carried out by the State Health Department.

The death rate among the negro race was higher than among the white race. In 1934 there were 167.0 deaths per 1,000 population among the negro as compared to the 136.4 among the white population. Tuberculosis was one of the highest causes of deaths among the negro race while violent or accidental deaths came second.

Contrary to the popular belief that the male is hardier than the female, 10,210 men died in 1934 and 7,742 women. Deaths among married men outnumbered the single men by 725.

STATE BOARD EXAMS

The next meeting of the West Virginia Public Health Council for the purpose of licensing physicians will be held in the State Capitol, Charleston, on March 16, 17 and 18, 1936. This meeting was originally planned and announced for March 2, 3 and 4, 1936, but the date was changed in order to avoid conflicting with the session of the American College of Physicians at Detroit.

COLLEGE OF PHYSICIANS

The Twentieth Annual Session of the American College of Physicians will be held in Detroit with headquarters at the Book-Cadillac Hotel, March 2-6, 1936.

Dr. James Alex. Miller, of New York City, is president of the College, and has arranged a program of general scientific sessions of interest to those engaged in the practice of Internal Medicine and associated specialties. Dr. Charles G. Jennings, of Detroit, is the general chairman of the session, and is in charge of the program of clinics and demonstrations in the hospitals, medical schools and other Detroit institutions. Dr. James D. Bruce, vice president in charge of University Relations, University of Michigan, is vice chairman of the Committee on Arrangements, and has in charge the preparation of an all-day program to be conducted at the University of Michigan on Wednesday, March 4.

Dr. Walter B. Cannon, Professor of Physiology at Harvard University Medical School, will deliver the annual convocation oration on "The Rôle of Emotion in Disease." Dr. Miller's presidential address will be on "The Changing Order in Medicine." About fifty eminent authorities will present papers at the general scientific sessions, while clinics and demonstrations will be conducted at the Harper, Receiving, Ford, Grace, Herman Kiefer and Children's Hospitals, of Detroit.

CANCER EDUCATION

A revised list of locations in West Virginia where cancer educational material, such as film strips, slides, projectors, etc., has recently been sent out by the Association Cancer Committee in connection with the American Society for the Control of Cancer. The material is chiefly for the use of county medical societies, although the list includes films and slides that were prepared for medical students, nurses, women's clubs, luncheon clubs and other lay groups.

The educational material includes slides on "Tumors of the Breast" and "Tumors of the Uterus," and film strips on "Carcinoma of the Breast" and "Tumors of the Uterus," for medical groups. In addition, there is a film strip for women's clubs and luncheon clubs on "Fight Cancer With Knowledge", and one for university students and nurses on "Cancer; Its Life History and Practical Measures for Its Control." There is also a movie film (the Canti film) of eight minutes for doctors, students and nurses.

Any and all of this material may be secured through the office of the state secretary at Charleston. In addition, doctors located in the northern part of the state may secure from Dr. R. B. Bailey, Wheeling, all of the above listed material with the exception of the lantern slides. The film strip on "Carcinoma of the Breast" may be secured also from Dr. W. A. Wallace, Martinsburg.

Film strip projectors and movie projectors may also be secured through Dr. Bailey and the Association headquarters. Members of the Cancer Committee are Dr. Bailey, chairman; Dr. Wallace, Dr. R. O. Rogers, Bluefield; Dr. B. H. Swint, Charleston; Dr. F. C. Hodges, Huntington and Dr. W. R. Goff, Parkersburg.

DECREASE IN DISEASE

A marked saving in human lives and improved health conditions throughout West Virginia were attributed in a large measure to the state-wide program of sanitation and education sponsored by State and Federal relief agencies in coöperation with the State Health Department by Dr. A. E. McClue, state health commissioner.

To substantiate his statement Dr. McClue pointed out the marked decline in the past three years in the deaths of children under two years of age from diarrhea and enteritis. In 1932 the death rate from these two diseases in West Virginia was 49.2 per 100,000 population, which was nearly three times

as high as the average for the United States. In 1933 this rate dropped to 32.2 and in 1934 it was 26.6. According to reports recently compiled by the State Health Department the rate for 1935 will be around 22.2. This reduction will mean the saving of the lives of over eleven hundred babies in the last three years.

THE N. R. A. DECISION

Many physicians doubtless are wondering what effect the recent decisions of the United States Supreme Court in the NRA and railroad pensions cases will have on legislation recently enacted by Congress to establish various forms of social insurance, originating from the report of the President's Commission on Economic Security.

Others are asking the same question.

Interesting comment on this subject was published in an issue of *The United States News* shortly after the history-making Supreme Court decision on the NRA cases and was in part as follows:

Welfare, like many another national problem, toppled from its headline position in the country's press on the day the Supreme Court handed down its history-making decision. Then, a few days later, it came startlingly to the fore as a result of the unexpected turn given by the President at his press conference.

Of late, certain well defined trends in the welfare scene, tied together, have given evidence of important developments to come in the drift from economic and social hazards to a more systematic assistance on the part of the Government against insecurity.

If, as the President pointed out, control of national social problems was to be denied to the Federal Government, what is the fate of the omnibus social security bill, which sought to empower the Congress to carry out its constitutional duty of promoting the general welfare of the citizens of the United States?

Sponsors of the social security bill point out that under Article I, Section 8, Clause 1, of the Federal Constitution, "The Congress shall have the power to lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and the general welfare of the United States."

However, as the United States Law Week points out, the Supreme Court has never ruled on the power of Congress "to expend public money for any purpose considered to be in the general welfare without restriction to the remaining enumerated powers of Congress set out in the Constitution."

Government counsel, in a case now awaiting a decision by the Circuit Court of Appeals, involving a condemnation of land for slum clearance and low-cost housing construction, argued that "Congress may, as a complement to its power to levy taxes for the general welfare, appropriate and expend money raised by taxation in such manner as it thinks will best benefit the general welfare."

The Government counsel further added that "the general welfare clause was understood and intended to confer a broad, unrestricted power of taxation and appropriation for the general welfare."

The question apparently boils down to one of the definition of "general welfare."

Counsel for landowners in the land condemnation suit argued that when the Constitution speaks of general welfare it means "the general welfare of the whole United States. Taxes are to be levied and appropriations made, not for the benefit of individuals, but for the entity known as the United States."

Speaking over a nation-wide radio network last week, Senator Pat Harrison (Dem.), of Mississippi, chairman of the Senate Finance Committee, said that it is the opinion of the experts in the Department of Justice who have studied the provisions of the social security proposal "that they are not affected by the Supreme Court's decision of last Monday, or the railroad retirement pension decision of some weeks ago."

This statement, however, was made before the President tinged the outlook for Federal social proposals with shadows. To add to the confusion, Edwin E. Witte, Executive Director of the President's Committee on Economic Security, has gone on record in the current issue of "State Government" as saying that despite the New Deal legislation, there is grave doubt "whether the Federal Government has authority to establish a national system of unemployment compensation."

Mr. Witte points out that there is no constitutional basis for such action except the taxing power and the welfare clause of the Constitution. The latter, he declares, "has never been regarded by the Supreme Court as conferring any powers on the Congress not granted specifically, and the former, while broad, cannot be employed where the court deems the tax a mere subterfuge for unauthorized regulation."

Even before the Supreme Court's decision, Mr. Witte realized the hazards of setting up a federally administered unemployment insurance system. The only safe course, he said, was one administered by the states.

However, the social security bill provides for a coöperative State-Federal plan. It imposes uniformity where uniformity is necessary and in all other matters allows wide latitude to the states to enact the kind of systems which will meet their local problems.

But will this division of powers between the States and the Federal Government in the matter of social security be sustained in the event of a court test? At present, the social security issues are as clouded a many another national problem following in the wake of the Supreme Court's decision. —*Ohio State Medical Journal.*

SOCIALIZER FILENE!

Edward A. Filene, organizer of the Twentieth Century Fund and one of the most ardent proponents for the practice of medicine by the laity, has just been having a stiff dose of his own medicine. We trust the therapy was to his liking. We may be excused for being a doubting Thomas in this regard, since Mr. Filene did not stick by his own prescriptions. In other words, though stricken with a severe case of pneumonia while on a visit to Russia, Mr. Filene was not willing to entrust himself to the mercies of that socialized medicine which he and scores of similarly misguided would-be philanthropists are so anxious to inflict upon the United States of America. For, while the Soviet dictator, Joseph Stalin, according to dispatches sent out by the Associated Press, ordered all medical facilities of the Kremlin placed at the Boston merchant's disposal, an appeal for help was made to Nazi Germany, still decidedly capitalistic. "The Foreign Office wired the Soviet Consulate in Berlin to grant an immediate visa to the German heart and lung specialist, Prof. Fritz Meyer, so he could come here tomorrow by airplane," was the dispatch sent out from Moscow under date of August 7 by the Associated Press.

The proletariat of Russia is deprived of all possibility of making such a cry from Macedonia as was the privilege of Mr. Filene. If Red Medicine so highly endorsed by the man who would be one of its godfathers in America is insufficient for him, how do the suffering millions of Russia's own poor manage with it? Yet that is the sort of medical care that Mr. Filene and his friends are mixing up for the United States citizenry.

The whole thing smacks somewhat of the adage

"When the devil was sick, the devil a saint would be;
When the devil was well, the devil a saint was he."

A sick socialist is very apt to be a capitalist, when it comes to taking care of himself.—*Illinois Medical Journal.*

WOMAN'S AUXILIARY

MRS. PRUNTY HONORED

Mrs. S. M. Prunty of Parkersburg, president of the Woman's Auxiliary to the West Virginia State Medical Association, received the distinctive honor of being elected to the first vice presidency of the Southern Medical Association at the St. Louis meeting the week of November 19. Mrs. Oliver W. Hill of Knoxville, Tennessee, was elected president.

The election of Mrs. Prunty as vice president of the second largest medical organization in the world is a distinct honor both for herself and for the West Virginia Auxiliary which she represents.

CABELL COUNTY

The Woman's Auxiliary to the Cabell County Medical Society met on November 11, 1935 at the home of Mrs. W. E. Neal. Mrs. W. O. Grimm, president, presided over the meeting.

A general discussion of business matters followed an interesting travel talk by Mrs. W. E. Neal on her recent trip to Canada.

Mrs. Gilbert Ratcliff was appointed to serve as the Auxiliary representative on the Council of Social Agencies.

The next meeting of the Auxiliary was scheduled for December 9, at the home of Mrs. Byrd Hunter.

MRS. EDWIN J. HUMPHREY, JR., *Secretary.*

FAYETTE COUNTY

The Fayette County Woman's Medical Auxiliary met at the Mountainair Hotel, Mt. Hope, W. Va., on Friday, November 29, 1935. Mrs. George Fordham, president, presided over the twenty-six members who were present.

A luncheon at one o'clock preceded the business session and program. Hostesses for the day were Mrs. Frank S. Harkleroad and Mrs. G. G. Hodges.

Following luncheon Mrs. S. W. Price spoke to the Auxiliary on the "New Social Security Bill." Mrs. R. D. Ketchum spoke to the group on the subject of "Prenatal Care of Women." The monthly review of *Hygeia* was given by Mrs. G. G. Hodges who talked in connection with this on the importance of *Hygeia* magazine in home and school.

Five new members were taken into the Auxiliary at this meeting. Plans were made during the business session for a one-act play to be given in the near future.

The next meeting was scheduled for December 19, at Glen Ferris.

MRS. FRANK S. HARKLEROAD, *Secretary*.

HARRISON COUNTY

The Auxiliary to the Harrison County Medical Society met at the Stonewall Jackson Hotel, Clarksburg, on January 2, 1936. Mrs. E. B. Wright, president, presided over the meeting. Fifteen members were present.

Mrs. W. H. Riheldaffer read "The Lure of Legendary Medicine" by Mrs. Benj. S. Preston, Charleston, W. Va. This was received with much interest.

Following a short business session the meeting adjourned until February 6, 1936.

MRS. H. H. ESKER, *Secretary*.

KANAWHA COUNTY

The Auxiliary to the Kanawha County Medical Society met on January 14, 1936, at the Charleston Woman's Club for luncheon. Mrs. John W. Moore, president, presided over the fifty-one members present.

Mrs. S. M. Prunty, president of the State Auxiliary, was present for the meeting and addressed the group on the subject of "Cooperation in Medical Auxiliary." Mrs. Prunty's address was received with much interest and was followed by a general discussion.

Mrs. Prunty also requested the Auxiliary to sponsor "illustrated talks" on cancer for the general lay public and also urged the ladies to participate in the present program of prenatal care.

During the business session the various committees gave their annual reports.

The next meeting of the Auxiliary will be held at the home of Mrs. Francis Clark in Kanawha City in February.

MRS. V. T. CHURCHMAN, JR., *Secretary*.

LOGAN COUNTY

The Auxiliary to the Logan Medical Society met on Tuesday, January 7, at the Woman's Club rooms in Logan. Seventeen members were present for the luncheon which was served by the Woman's Club.

Mrs. Harold Vanhoose, president, presided. Mrs. Winefrede Wencke of the Friends Health Service gave a talk on "Tuberculosis in Logan County." Mrs. Winefrede Wencke and Mrs. Bernard C. Harris were accepted by the Auxiliary as associate members.

The next meeting of the Auxiliary will be held on February 4, 1936.

MRS. V. A. DEASON, *Secretary*.

MARION COUNTY

The Auxiliary to the Marion County Medical Society met on November 26, at the Hotel Fairmont, Fairmont, W. Va. Mrs. H. V. Thomas, president, presided over the twenty-seven members present.

Mrs. Edwin Robinson, president of the Marion County Tuberculosis Association gave a history of the organization since its formation.

Mrs. E. D. Wise gave the personnel of the W. Va. Tuberculosis and Health Association and also reviewed the Association's accomplishments during the past year.

The customary review of *Hygeia* was given by Mrs. C. T. Francis.

During the business session the Auxiliary agreed to purchase and present to the Fairmont Library "American Doctors" by Segrist.

The next meeting of the Auxiliary will be held the last Tuesday in January.

MRS. E. D. WISE, *Secretary*.

PARKERSBURG ACADEMY

The December meeting of the Auxiliary to the Parkersburg Academy was held at the home of Mrs. E. C. Hartman with Mrs. W. B. Richardson as assistant hostess.

Mrs. Ray H. Wharton, president, presided over the meeting. Twenty members were present.

Mrs. A. R. Sidell presented a paper on "Cosmetics" which was followed by an interesting discussion. Mrs. A. D. Knott read an instructive paper on the subject of tuberculosis.

Dr. A. Morgan Dearman, member of the Fourth District Committee of the W. Va. Maternal Wel-

fare Committee, spoke to the Auxiliary on maternal welfare and urged their coöperation in disseminating information to expectant mothers in regard to the proper prenatal and postnatal care. Dr. Wharton explained to the group how this work would help greatly in producing a lower mortality rate among mothers and babies.

The Woman's Auxiliary to the Academy of Medicine of Parkersburg held a most interesting and well attended meeting at the home of Mrs. B. O. Robinson on January 14, 1936. Mrs. R. H. Wharton, president, presided. The program was presented by Mrs. R. H. Giltner, who gave a reading from *Hygeia* magazine on "Importance of Vitamins."

MRS. A. MORGAN DEARMAN, *Secretary*.

EXPERIMENTAL PLANS

There is no claim of perfection on the part of the profession for the present scheme of medical practice. Change is inevitable. Medicine has always adapted itself to the social and economic order in which it finds itself. This it can continue to do only if freed of politicalized regulation and control. There is no opposition on the part of the profession to the proper study and trial of experimental plans for medical care in changed form. But medicine will vigorously defend its personal rights which are ignored by lay workers who have nothing better to offer than state medicine.—*The Journal of the Arkansas Medical Society*.

LIFE AFTER FORTY

A happy, healthy later life depends on the detection and treatment of disease prior to the age of 40. Dr. Samuel Morrison discusses the reasons for this statement in "Does Illness Begin at Forty?" appearing in the January *Hygeia*. He begins by asking, Is it a mere coincidence that 40 marks the age at which the majority of individuals begin to see the physician more frequently?

One obvious reason for the failure to secure adequate management of early disease is the ability of youth to resist disturbing symptoms temporarily. At 40, however, the accumulation of repeated mild illnesses begins to present symptoms which are more disturbing, less intermittent, and for the first time very significant as far as the host's general health is concerned.

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The only saving factor in preventing serious or chronic illness at and after 40 is the present tendency toward periodic examination. This is a means by which early changes toward the abnormal may be discovered.

There are some changes which are to be expected with advancing years. Among these, arteriosclerosis, or hardening of the arteries, is easily recognized. Similarily a large number of cases of diabetes are discovered between the ages of 40 and 50. Middle life marks the period when most of the more serious forms of gastric disturbances first become manifest. Again careful investigation will discover that many of these disorders have their origin in youth.

When one realizes how many cases of cancer of the stomach are inoperable when discovered and how frequently the disease occurs, then the importance of careful periodic examination by a physician makes an indelible impression.

The rush of daily routine, worries, insomnia, hurriedly chewed and badly digested meals, excessive smoking and drinking must be governed by the state of well being of the individual organs of the body and not by the whole organism.

BOOK REVIEWS

MINOR SURGERY IN GENERAL PRACTICE

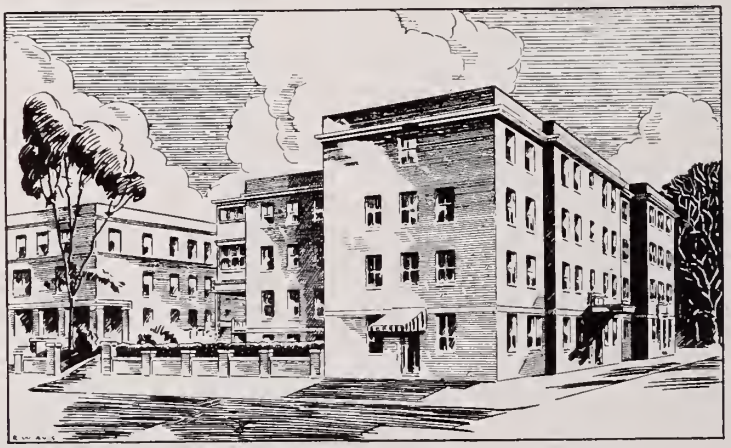
W. Travis Gibbs is the author of "Minor Surgery in General Practice", published by Paul B. Hoeber of New York. The book is a concise summation of the entire subject of minor surgery written in such plain language that the average layman should not experience any difficulty in understanding it. Diagrams illustrating technique are frequent, and though profuse elaboration is avoided, the author succeeds in making his points perfectly clear.

The author is also to be commended for including a chapter on radiotherapy. It is a brief yet fairly thorough account of the efficacy and limitations of this comparatively new but highly promising method of treating malignant diseases.

Conclusion: The book should prove beneficial to every general practitioner of medicine, particularly the one employed in rural practice, where he is apt to be called on to do considerable minor surgery.

Reviewed by Joseph Horwitz, M. D., Kayford, W. Va.

McMILLAN HOSPITAL Charleston, W. Va.



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THE WEST VIRGINIA MEDICAL JOURNAL

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII MARCH, 1936 No. 3

URINARY CALCULI*

Their Experimental Production and Solution with Clinical Application

By C. C. Higgins, M. D.
Cleveland Clinic, Cleveland, Ohio

Clinical observations have clearly demonstrated that a direct relationship exists between the formation of urinary calculi and the absence of certain essentials in the diet. Observations of this relationship have been made in India by McCarrison[1] and in China by Fujimaki.[2] McCarrison stated that in certain parts of India calculous disease occurs so frequently that these regions have been designated as stone areas, and he found also that stone areas exist in those regions in which the people live on a poor, monotonous diet; while Joly[3] found that in England, stone areas occur in Derbyshire and in Westmoreland. A few years ago in this country, Holmes and Coplan[4] sent questionnaires to the various members of the American Urological Association, and from their reports, it was concluded that stone areas in the United States occur in southern Florida and in southern California. It has also been noted that in certain countries there has been a marked decrease in the incidence of calculous disease in children during the past hundred years. While the statistics of Denos and Minot[5] and Civiale[6] demonstrate that in their time, calculous disease was one of childhood, Joly has recently stated that in France and in England, it is now not a disease of childhood but rather one of adult life. He believes there is no doubt but that in those countries where dietary education and nutritional progress has occurred, there has been evidence of a decrease in the incidence of calculous disease in children. These conditions, however, do not prevail throughout the world and we find from reviewing the reports of Assendelft[7] in Russia, that calculous disease at the present time in the region of the Volga in Russia is one of childhood, and that in the admissions to the hospitals, 55 per cent of the cases of calculous disease occur in children under the age of 15 years. A similar condition exists today in Dalmatia.[8]

It has also been noted that in certain parts of Europe, there has been an increase in the number of patients with urinary calculi since the World War. When we appreciate that at times armies did not have adequate commissaries, but derived their food from the locality in which they were stationed, we can

*Read before the Kanawha Medical Society, Charleston, on September 10, 1935.

understand that the populations in these communities existed on a deficiency diet for a considerable period of time. Finally, the work of McCarrison[9], Osborne and Mendel[10], and of myself[11] has demonstrated the relationship between a deficiency of vitamin A and the production of urinary calculi in experimental animals.

If white rats are maintained on a diet deficient in vitamin A for a period of 275 days and then subjected to postmortem examination, it is found that 88 per cent have stones in the bladder and approximately 40 per cent have stones in the kidney. We likewise find pathology similar to that which is noted in clinical cases. If the stone is producing an obstruction at the ureteropelvic junction and if an infection is present, pyonephrosis develops; if no coexisting infection is present, hydronephrosis is found. Likewise, if a stone is impacted in the lower ureter, considerable dilatation occurs above the point of obstruction in addition to hydronephrosis. When the stones occur in the bladder, there is a marked inflammatory reaction and in a short time after the stones develop, a coexisting infection will be found. Chemical analysis of the stones which form in the presence of a diet deficient in vitamin A shows them to be composed mainly of calcium phosphate and carbonate with traces of a mucoid substance. No oxalate or uric acid is present.

After our earlier researches had been made, the question arose as to whether, by modification of the constituents of the diet, we could alter the chemical composition of the experimentally produced calculi. It was found that when the phosphorus in the diet was decreased in relation to the calcium, the chemistry of the stones was directly reversed. The stones then were found to be composed of calcium carbonate with only a slight amount of phosphates. Again no oxalates or uric acid were noted.

After these stones had been produced by means of a diet deficient in vitamin A, the question arose as to whether the stones could be caused to undergo solution and disappear when vitamin A was restored to the diet. One drop of cod liver oil was placed directly in the mouth of the experimental animal daily by means of a medicine dropper. Invariably, if the rat survived the experiment, the stone dissolved and disappeared, regardless of whether it was located in the kidney or in the bladder. The time required for the solution of the kidney stones seemed to be dependent directly upon the degree of infection and the impairment of renal function which was present. In the absence of infection, the stones disappeared in a shorter time than when there was a coexisting infection.

One of the objections raised to the experimental work was that the stones were produced in an animal phylogenetically remote from the human being, so it was decided to experiment further on a group of dogs. Therefore, nine dogs were maintained on a diet deficient in vitamin A for a period of seven months. In this experimental work, it was important that only a very mild degree of deficiency be permitted. We did not allow xerophthalmia or even those signs indicative of moderate deficiency to develop. After the dogs had been maintained on the deficiency diet for nine months, five were subjected to operative intervention. A cystotomy was performed, and in four of the animals multiple, large stones were found in the bladder. In the fifth dog, an infection was present in the bladder but no calculi were found. One stone, too large to pass spontaneously, was allowed to remain in the bladder which was then closed by the usual technique. Chemical analysis of the stones showed them to be composed of calcium, ammonium phosphate and carbonates. These dogs are now on a high vitamin A diet in an attempt to determine whether or not the stones will undergo solution and disappear in the same manner as did those in the white rats.

The question has been raised as to why uric acid is not a constituent of the stones formed in the white rat. We must remember that in this experimental animal, urea is broken down into allantoin and very little uric acid is elim-

inated. Since allantoin is very much more soluble than uric acid, it is not a constituent of the stone. It is therefore probably impossible when the white rat is used as an experimental animal, to produce a stone composed of uric acid or urates. However, it has been known for some time that the Dalmatian dog has a unique metabolism in that it eliminates a large amount of uric acid in the urine. Therefore, two Dalmatian dogs are now being maintained on a diet deficient in vitamin A for a considerable period of time in order to determine whether or not pure uric acid calculi can be produced. It also has been known that the chicken eliminates a large amount of uric acid in the urine. When chickens are maintained on a vitamin A deficiency diet, they become ataxic, and show marked loss of strength in the legs, ruffling of the feathers and diarrhea. If this deficiency is continued for a period of time, the birds die quite rapidly. A group of 40 chickens has been placed on a diet mildly deficient in vitamin A for a period of five and one-half months. Thus far in all the birds that have been subjected to postmortem study, we have found small calculi and urates in the kidney, the ureters being filled with urates, uric acid and small uric acid calculi.

In an attempt to produce a large uric acid stone simulating a stone in the bladder, colostomies were performed on chickens and the cloaca was utilized as a bladder. After the birds had been on the deficiency diet for a period of four months, large hard concretions of pure uric acid were removed from the cloaca.

Therefore, at the present time, we are able to produce experimentally: (1) in the white rat, stones composed of calcium phosphate with traces of calcium carbonate; and (2) stones composed of calcium carbonate with only traces of calcium phosphate; (3) in the dog, stones composed of calcium and amonium phosphate with traces of carbonate; and finally, (4) in the chicken, we are able to produce calculi composed purely of uric acid.

The question arose as to whether there might be a clinical application of this experimental work. Frequently, observations made in the experimental laboratory cannot be verified by clinical application. However, after considerable deliberation, we decided to treat a selected group of cases conservatively to ascertain whether or not these stones would undergo solution and disappear spontaneously without surgical intervention. During the past 18 months, therefore, patients in the following groups have been treated by use of the diet:

(1) Patients with bilateral renal calculi in whom operative intervention was not deemed advisable;

(2) Patients with renal calculi who refused operative intervention;

(3) Patients with a small stone in the kidney pelvis which was not producing an obstruction;

(4) Patients with a small stone in the calyx which was not producing an obstruction;

(5) Patients who gave a history of passing small stones at frequent intervals, in whom we were unable to demonstrate a large stone in the kidney itself;

(6) Orthopedic patients with fractures or osteomyelitis who are required to lie in a recumbent position for a considerable period of time, and in whom we know there is a tendency for calculi to develop;

(7) Patients who had calculi of sufficient size to require nephrectomy;

(8) Patients who had had stones removed surgically and in whom it was desired to prevent recurrence.

During the past two years the following routine has been followed in the examination of all patients who have stones in the kidney or bladder. A careful history is first taken to determine whether or not there is a familial tendency toward the formation of such stones as we see in cases of cystine lithiasis. A careful history is taken also to determine whether or not there has been a deficiency in the diet. It is of the utmost importance to gain information regarding any deficiency but it is very difficult to learn such facts from the patient.

The Ohio Experimental Station has shown that the vitamin A content of milk in the winter months may be one-half of that in the summer when the cows are grazing in the pastures. It has also been demonstrated that the vitamin A content of eggs towards the end of the laying season may be only one-half that in the summer months. Therefore, our chief sources of vitamin A, that is, the dairy products, vary considerably during the year and this fact must be taken into consideration.

After a complete history has been taken, a physical examination is made and considerable care must be taken in the examination of the neck to determine whether a palpable parathyroid tumor is present. This is followed by a plain röentgenogram of the kidneys, the bladder, and the ureters to determine whether or not stones actually are present, whether they are bilateral, unilateral, or whether they may be present not only in the kidneys, but also in the bladder or the ureters. This is followed by a cystoscopic examination, and after a careful inspection of the bladder, catheters are passed to both kidney pelves and specimens are collected for determinations of the pH of the urine and for culture, stained smear of the sediment, and a routine examination such as sugar, albumin, casts, and the type of crystals and sediment present. This is followed by a fractional phenosulphonphthalein test. Pyelograms may be made at this time. The following day, after the spasm of the ureters, due to the passage of the catheters, has subsided an intravenous urogram is made which will indicate whether the stone actually is producing an obstruction and also give additional information regarding the renal function. Obviously, if the stone is producing an obstruction and the patient is having frequent attacks of colic, conservative treatment is not indicated. Routine examinations of the blood are likewise of considerable importance. If there is an elevation of the blood calcium and a lowering of the phosphorus, our attention is directed toward the possibility of the presence of hyperparathyroidism. We then make further studies by calculating the elimination of calcium and phosphorus in the urine and advise röentgen study of the bones. If there is an elevation of the blood uric acid, it is obvious that the purines in the diet must be restricted. The routine determinations of blood sugar, urea and creatinin are also made. If the patient has passed a stone previously, or if one has been removed surgically, the chemical constituents are determined in our laboratory. A routine Jean's test is made before the diet is started because this is one of the most accurate tests that we have for determining mild degrees of vitamin A deficiency. This test is useful also in determining whether or not the patient is receiving adequate amounts of vitamin A in the diet and in following the progress of the patient.

The patients for whom we believe conservative treatment may be beneficial are hospitalized for from three to five days. The dietitian visits the patients daily to instruct them in regard to the details of the diet and to teach them why certain foods are allowed and others are restricted. The patient is taught to make his own daily determination of the pH of the urine with an apparatus manufactured by the LaMotte Chemical Products Company of Baltimore, Maryland, which is accurate and simple for the patient to use, and the price is exceptionally reasonable. While in the hospital, the pH determinations made by the patient are checked against those made in our laboratory in order to insure the accurate use of the apparatus.

Two classes of stone cases occur: (1) those in which the stone is formed in an alkaline urine, and (2) those in which the calculi develop in an acid urine. Calcium phosphate and carbonate stones develop in an alkaline urine, while oxalates may be precipitated in a wide range of urinary reactions. Uric acid and cystine calculi, which are seen less frequently, develop in an acid urine.

The diet prescribed for the patient whose stone has developed in an alkaline urine consists of a high vitamin A acid-ash diet and the

diet for the patients in whom calculi develop in an acid urine is the high vitamin A alkaline-ash diet.

Briefly, the following routine applies to the cases in which the stones are composed of calcium carbonate, phosphate, or oxalates. In the beginning of treatment, a diet is used which has an excess acid-ash of 17.3 c.c. The determination of the pH of the urine is made daily and it must be reduced to approximately 4.5 or 5. Therefore, the acid-ash content of the diet is varied daily until the pH of the urine is reduced to 4.5 or 4.8 and for this purpose it may be necessary to use an excess acid-ash of 28 or 30 c.c. in the diet. As a general rule, by this varying of the diet, the pH is reduced to the desired level in a period of from three to four days. In cases in which infection is present, a longer period may be necessary, and occasionally, where a proteus organism is the offending agent, it may be impossible to reduce the pH of the urine to the acid side either by the use of the ketogenic diet or by the high vitamin A acid-ash diet. Occasionally, in addition to treatment by diet, it is necessary to give acidifying agents by mouth. I have found that ammonium chloride in enteric coated tablets has been the most satisfactory medication and it produces less gastrointestinal disturbance. A similar routine is used in the presence of uric acid or cystine stones except that the alkaline-ash diet is used. Vitamin A is given in the form of two Carotene-in-oil or Haliver-oil capsules daily for a period of one month. Then one Haliver or Carotene-in-oil capsule is given daily.

When the patient leaves the hospital, he is given a complete diet list and instructions and is told to report to his family physician every two weeks taking with him the daily pH determinations of the urine. The family physician therefore maintains the desired acidity or alkalinity of the urine by varying the administration of medication by mouth. It is quite important that the patient have the pH determination of the urine made one hour before lunch, in order to avoid the effects of the alkaline tide and likewise the second urine voided in the morning is used to avoid the effect of awakening respiration. It must be remembered that as a diabetic patient's diet is controlled by the blood sugar determinations, the high vitamin A alkaline or acid-ash diet is controlled by the pH determination of the urine.

Results: Briefly, the following results have been secured by treatment of urinary calculi with the high vitamin A acid or alkaline-ash diet during the last two years. The calculi which were too large to pass spontaneously in a group of 35 patients have dissolved and disappeared following dietary treatment. These stones were composed of calcium and magnesium phosphate, of carbonate, of oxalates and of uric acid. I have treated no cystine stones by dietary measures. A larger group of patients has been treated by the dietary regimen, but at the present time there has been insufficient change in a period of several months to be demonstrable röentgenographically; therefore, it is too soon to tell what may be anticipated from the dietary treatment of urinary lithiasis. However, it is certain that if the stone is not producing an obstruction, thereby rapidly destroying the renal parenchyma, or if the patient is not disabled from pain, he should be treated conservatively for a period of time to determine whether or not operation may be avoided.

At the present time, I am most enthusiastic concerning the dietary treatment in the following cases:

(1) The group of patients who passed stones at frequent intervals but in whom we are unable to demonstrate larger calculi in the kidney. I now have a group of 38 patients, many of whom happen to be doctors, who have been entirely free from symptoms for over a period of 18 months. Previous to the institution of treatment, these patients had attacks of colic every week or at very frequent intervals.

(2) The group in whom it is desirable to prevent the recurrent formation of calculi following operation. Up until 1932, recurrent calculi occurred in 16.4 per cent of our cases.

Since we have added the diet to our postoperative armamentarium, we have reduced the incidence of recurrence to 4.7 per cent. As you know, the incidence of recurrent calculous formation is quite high and varies between 15 to 40 per cent depending upon the physician who is reporting the series of cases. However, recurrence is frequent enough that it is one of the most distressing features in the surgery of renal lithiasis. I believe the operative removal of a calculus in the kidney is the simplest step in the management of renal lithiasis, and the prevention of recurrence is one of the most difficult steps in the management of such cases. In the majority of cases, the recurrent stones which develop are those which form in an alkaline urine. As a general rule, the high vitamin A acid-ash diet which renders the urine acid in reaction will minimize the recurrence of such calculi. I do not wish to infer that we rely only upon the diet to prevent the recurrence of calculi. Rather, those procedures which we have used in the past are also used in the postoperative management in addition to the diet.

I feel quite certain that if the patients, who live in those communities which have been reported as stone areas in the United States, received adequate amounts of vitamin A, the formation of calculi in a large percentage of cases could be prevented. In the orthopedic patients in whom stones develop while the patient is in the hospital, we find that as a general rule, the stones are composed of calcium and magnesium phosphate,—again stones which form in an alkaline urine. If the high vitamin A acid-ash diet is prescribed for these patients while they are in the hospital, the chemical possibility of the development of such calculi is reduced to a minimum.

In a group of 35 patients, the stones have undergone spontaneous dissolution after the prescribed diet had been followed for various lengths of time. In many instances, the calculi were quite large and then they were seen to be breaking up and, as a general rule, the patient felt very little discomfort in the passing of these fragments, which appear to be jelly-like masses. If one of these small masses be placed on a blotter and the fluid extracted, it becomes a stone when dehydration occurs. The time required for the solution of the stones varies in each case; in some instances, stones have disappeared in a period of from four to five months, while in others a period of a year has been required, and in some other cases, even after a period of a year, no change has occurred.

We have a rather interesting instrument which was devised by Dr. William E. Lower and which is used routinely following the extraction of a stone from the kidney pelvis. This instrument is first passed into the upper calyx of the kidney and the calyx is irrigated. Suction is then applied and if any sand or small fragments of the stone are present, these will adhere to the rubber tip of the instrument and can be removed. This procedure is then carried out in the middle calyx, then in the lower calyx and finally in the pelvis of the kidney. In this way, we believe that the many small fragments which might be retained can be removed at the time of operation.

Conclusions: (1) In the experimental animal urinary calculi may be caused to form by a deficiency in vitamin A in the diet and then caused to dissolve by restoration of vitamin A to the diet;

(2) We believe that a certain definite group of calculi can be treated by conservative measures;

(3) If surgical intervention is required, certainly the diet should be prescribed postoperatively to reduce the incidence of the recurrent formation of calculi. That this treatment is of definite value is indicated by the marked decrease in the percentage of recurrent stones which we have noted since the diet has been used in our postoperative armamentarium.

(4) Each patient must be individualized in exactly the same manner as a diabetic patient;

(5) Coöperation is required between the patient and the physician if a satisfactory result is to be secured.

REFERENCES

1. McCarrison, R.: *The Causation of Stone in India.* Brit. M. J., 1:1009-1015 (June 13), 1931.
2. Fujimaki, Y.: *Formation of Urinary and Bile Duct Calculae in Animals Fed on Experimental Rations, Note on Treatment.* Japan Med. World, 6:29-35, 1926.
3. Joly, J. Swift: *Stone and Calculous Disease of the Urinary Organs.* C. V. Mosby Co., St. Louis, 1931.
4. Holmes, R. J. and Coplan, M. M.: *Study of Geographic Incidence of Urolithiasis With Consideration of Etiological Factors.* J. Urol., 23:477-489, (April) 1930.
5. Desnos and Minot: Cited by Joly, op. cit. 3.
6. Civiale: Cited by Joly, op. cit. 3.
7. Assendelft: Cited by Joly, op. cit. 3.
8. Racic, Jaksa: *Calculus of the Bladder in Dalmatia.* Urol. & Cutan. Rev. 39: 158-163 (March) 1935.
9. McCarrison, R.: *The Experimental Production of Stone in the Bladder.* Brit. M. J., 1:717-718, (April 16) 1927.
10. Osborne, T. B. and Mendel, L. B.: *The Incidence of Phosphatic Urinary Calculi in Rats Fed on Experimental Rations.* J. A. M. A., 69:32-33, (July 7), 1917.
11. Higgins, C. C.: *The Experimental Production of Urinary Calculi.* J. Urol., 29:157-185, (February) 1933.

Experimental Production of Urinary Calculi in Rats. Urol. & Cutan. Rev., 38:33-39, (January) 1934.

Production and Solution of Urinary Calculi. Experimental and Clinical Studies. J. A. M. A., 104: 1296-1298, (April 13) 1935.

NEPHRALGIA—SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT*

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In the consideration of the so-called painful kidney or nephralgia, it is quite necessary to have a definite understanding concerning the condition in question.

Truly pathological conditions of the kidney at some time or other, either in all or in a large percentage of the cases presenting any one particular type of pathology, will have a painful kidney. Therefore, we are compelled to separate and differentiate the type we are going to consider this evening. At this point it might be mentioned that the consideration of conditions that have definite gross pathological lesions, such as renal ptosis, calculi, renal tumors, renal tuberculosis, pyelonephritis, pyonephrosis, ureteral strictures, marked hydronephrosis, etc., are not the conditions to be discussed, even though they produce a painful kidney. The few remaining renal lesions that may produce a painful kidney are the various types of nephritides, mild hydronephroses, cases of so-called essential hematuria, etc. These conditions are likewise not the topic for discussion. So in reality if a definite pathological renal lesion is encountered causing pain it is no longer placed in the group of so-called painful kidneys even though we are well aware that all the above-mentioned conditions produce painful kidneys.

The real painful kidney that we refer to here has been discussed very little in the literature. It is that type of kidney where no definite pathology is demonstrable after a careful study, but merely presents symptoms of renal pain and other symptoms that may accompany the condition. Whether such a condition does in reality exist is still questionable in the minds of many. It is perfectly possible that a lesion which may be minute, goes unrecognized even though carefully searched for.

In order to understand somewhat the mechanism and reasons for some of the disturbances in these conditions a brief review of the nerve supply of the kidney will be made.

Nerve Supply of the Kidney: The nerve supply of the kidney has been demonstrated by Burton-Opitz[2] to be unilateral. The semilunar ganglion is the principal source of the nerve supply to the kidney, by the way of the renal plexus. In fact, the kidney has a double

*Read before Pittsburgh Urological Society and Harrison County Medical Society, Clarksburg, W. Va., October 3, 1935.

nerve supply, in that in addition to the renal plexus which comes down from the semilunar ganglion, there is a communication with the greater and lesser splanchnics by way of the semilunar ganglion. Sometimes there is a communication with the vagus nerve. In addition, the renal plexus receives branches from the lesser splanchnics and sometimes from the greater splanchnics, the first lumbar ganglion and occasionally a branch from the suprarenal plexus. According to Harris and Harris[3] there is a nerve coming off from the renal plexus which takes its course along the posterior inferior aspect of the renal pelvis and accompanies the ureter in its lower portion. They name it the principal nerve of the ureter.

The renal plexus itself is arranged in a network about the vessels of the renal pedicle and consists of nerve fibers and ganglia. The renal vessels receive most of their nerve fibers from the eleventh, twelve and thirteenth thoracic nerves. They enter the kidney with the renal vessels and follow them to their finest branches. Nerve fibers have been found between the cells of the tubules and the capsule.

Animal Experimental Work: Working on the assumption that all kidney lesions demonstrate a disturbed function in the diseased kidney, the methods resorted to in the various experiments were those which may have a direct bearing on the function of the kidney; namely, experimenting with the nerve supply of the kidney. The various experiments most naturally were performed on normal kidneys.

These experiments consisted principally of sectioning the splanchnic nerves, either on one side or both sides, stimulation of the splanchnic nerves, sectioning of the renal plexus, denervation of the renal vessels, injection of fluids, ligation of renal vessels or ureter, etc. In some cases various drugs were injected in an effort to produce some disturbance to the kidney. The real pathological pictures encountered in the human have not been produced in the kidneys of the animals as yet, so that a fair test for the treatment of the various renal conditions have not been carried out in the animal.

In 1859 Bernard[1] observed that after sectioning the splanchnic nerve in a dog there was an increased flow of urine from the kidney of that side. Since then this experiment has been verified on numerous occasions.

Clinical Experimental Work: Clinical observations on the so-called painful kidney have only recently been made.

The lesion has received various terms up to the present date, some of which are nephralgia, renalgia, painful kidney and sympatheticotonus kidney and a new term that we add, "essential nephralgia."

Considerable misunderstanding exists as to the exact lesion we are considering when any one of the above terms is used. They are all the same lesion with a different name. As mentioned earlier in the paper, any lesion of the kidney may produce a painful kidney but it is not the same renal lesion we are referring to this evening, when the above terms are used. The only clinical work that has been studied along these lines is not the true type of painful kidney. In addition the study has been made principally along the lines of treatment rather than otherwise. For instance, in 1923 Newirt[7] produced a resumption of urinary secretion by anesthetizing the splanchnic nerves in a case of kidney stone colic. This is not a true painful kidney as other pathology was present.

The next work was again along the lines of treatment of other renal conditions. In 1926 and 1928 Hess[5,6] reported in all, five cases, all having a nephralgia but other pathological conditions were present. All of these cases were reported from the standpoint of treatment. It is questionable whether these should be placed in the category of the so-called painful kidney, although renal sympathectomy was probably the logical form of treatment.

Papin and Ambard[8] in 1923 reported six cases and two more since then, in which pain associated with the early hydronephrosis was present. They likewise were reported from

the standpoint of treatment—renal sympathectomy plus decapsulation and nephropexy. It is also questionable whether all his cases should be placed in the group of the so-called painful kidney as other pathology was present.

Harris and Harris[1] in 1930 reported renal sympathectomy in twenty-eight cases having varying grades of pain in whom a full urological study revealed little or no gross abnormality. This group although not described in detail appears to be the only one in which all the cases were probably truly painful kidneys.

Wharton and Hughson[9] in 1931 reported two cases of painful ureters unassociated with any renal pathology in which results were obtained by denervation of the ureter.

Our Material: Our series of cases is very small since we were desirous of selecting cases in which no definite pathology could be found; in other words cases in which we could find no reason for the pain in the kidney, even to the point of not selecting any case that had any evidence of any hydronephrosis or any evidence of a nephritis. They can be truly classed as "essential painful kidneys." This group comprises seven cases. We have a large group of cases of painful kidneys associated with very early hydronephrosis or some form of nephritis which is being reported separately. Since the type of painful kidney in question has not been reported upon in full, we felt that our cases presented sufficiently interesting data for consideration. True enough the series is small, but since serious consideration was given of just this type only in the past few years, we feel that some definite conclusions can be arrived at.

Six of the seven cases were females and one a male. The ages were 20, 22, 30, 35, 37 and 45. The pain was on the right in four and on the left in three. Three of them had had previous operations for the relief of this same pain and four had no operative history. Six cases had no other associated pathology in the urinary tract and one had an associated condition of renal ptosis.

In all the cases, very careful study was made over a long period of time. In most instances they were given prolonged medical attention. All the cases had been given the benefit of consultation relative to other lesions. They were all given ureteral dilatations with lavages of the renal pelvis to give them the benefit of an unbiased opinion of a possible ureteral stricture. In all the cases, foci of infections were investigated, many x-rays were taken and functional tests made. Complete blood and urine analyses were made. Blood pressure, intake and output studies, several cystoscopies and repeated and various types of pyelographies were made. Various drugs were given internally and diathermy used in some of the cases in the hope that some relief might be obtained. In some metabolic studies were made.

The syndrome of symptoms are not many, but simulate other conditions. Pain was present in all seven cases. It is a constant symptom not of a continuous type, but rather of an intermittent type occurring in the lumbar and upper abdominal region. Occasionally, it is observed to radiate along the course of the ureter or thigh. In most instances it is not of an excruciating type, but sometimes requires a hypodermic of morphine. A second constant symptom occurring in all seven cases was a sensation of intermittent distention or fullness in the lumbar region. Nausea was present in only one case. A sensation of constriction or tight feeling was observed in some instances. Urinary disturbances have been observed in only one case and then in the form of a urinary frequency. No hematuria was noticed. All these cases presented nervous manifestations. No other symptoms of any importance were noticed. There was no history of injury in any of the cases. Focal infections were present in three instances.

In examination of these patients, the kidneys were not palpable in any of them. Tenderness in the lumbar region was present in all seven cases and tenderness in the upper abdominal region in five. No pathological elements were present in the urine of any of

them. Plain röentgenograms of all were negative for radiable shadows suggestive of calculi. Bladder examinations of all seven were negative. No obstruction was encountered with a No. 7 catheter in the ureter on the suspected side in any of them. No scratch was observed on the wax in any of them. The study of the urine from the affected kidney revealed no pathological elements, but there was a decrease in the output on this side. Cultures of the urine in all cases were negative. Combined phenolsulphonphthalein in all the cases ranged between 55 and 75 per cent. In some cases there was a slight decrease in relative output of pthalein from the affected side. Relative ureas were not made.

Pyelographic Studies: Capacities of the renal pelvis with water were determined in all cases and ranged from four to 11 c.c. In determining this capacity a very valuable sign towards the diagnosis was observed. Patients with this so-called painful kidney always claimed that their pain was reproduced in the same location.

Ureteropyelograms were made in the horizontal and erect posture, injecting two cubic centimeters less than the capacity with the catheter being withdrawn somewhat. Immediately after this, a ureteropyelogram was taken in the erect posture, to see if any renal ptosis was present. In only one of our cases was it present. The catheter is next removed and 10 minutes allowed to elapse after which a retention plate is taken, to determine whether any retention of the opaque medium is present. It is on this finding that a great deal of stress is laid in the diagnosis. All seven of our cases had definite retention of the opaque solution.

Harris and Harris studied some of their cases by pyeloscopy and felt that they had received additional information in observing how the pelvis and calyces filled. In their series of cases they divided them into three groups, as follows:

1. Where they observed irregular and incomplete contractions of the calyces and renal pelvis, so that the impulse for peristalsis either does not reach or does not pass beyond the ureteropelvic junction. Delayed emptying time is present here;

2. Marked slowing down with irregularity and increased power of the contractions, associated generally with dilatation of the renal pelvis and clubbing of the calyces. Delayed emptying time is a feature here also;

3. Dilatation and immobility of a single calyx and its delayed emptying.

Diagnosis and Differential Diagnosis: In diagnosing the conditions of the so-called painful kidney, not only should all other pathological conditions of the urinary tract, but conditions of a general surgical nature, gastrointestinal, gynecological and orthopedic nature be ruled out. Diagnosis of the condition should not be made after only one examination or from one particular finding. The two conditions in the urinary tract that should be ruled out in addition to the common conditions found in the urinary tract are (1) ureteral stricture, and (2) uric acid calculus.

If in doubt about the first, dilate the ureter. In the case of the second it will be found a very difficult condition to rule out. Urine from the bladder should be permitted to stand for about 48 hours and examined for uric acid crystals. Wax bulbs should be used. The opaque solution should be permitted to flow out and a röentgenogram taken to see if any of the opaque solution remained around any particular portion of the urinary tract. Repeated pyelograms should be made studying the opposite side as well, using skiodan as an opaque solution as this gives very little reaction. The definite diagnosis depends first on the fact that no gross pathology is seen in the urinary tract aside from possibly a slight dilatation of the pelvis or calyces, secondly on the test of reproduction of pain, thirdly on the delayed emptying time of the opaque solution as seen on the pyelogram, fourthly, on the temporary relief by eserin as suggested by Harris and some evidence of generalized sympatheticotonus on the side of the lesion,

and lastly on the fact that urinary findings are negative.

Treatment: In treating the condition of painful kidney it is well to dilate the ureter on several occasions and lavage the renal pelvis. Ureteral catheters have been left in place for two or three days at a time. No relief was ever seen from this. Antispasmodics such as benzyl benzoate should be tried. Morphine should be given when necessary. If a truly painful kidney is present the only time relief will be obtained by the patient is if an operation is performed. The operation of choice is a renal denervation or renal sympathectomy. From the scientific standpoint only a renal sympathectomy should be performed. This should not be supplemented by a nephropexy or a decapsulation. If the condition is truly painful kidney it needs no decapsulation or nephropexy.

In all the cases of Papin, decapsulation and nephropexy were performed in addition to the denervation. The operation may be done transabdominally or extraperitonally by way of the lumbar route.

In the cases we operated upon, the lumbar route was selected. The usual Israel incision is made, so that a good exposure is obtained. The kidney is delivered in the usual way and after it is up in the wound, slight traction can be made. Graduate traction seems to stretch the vessels. As much exposure of the vessels as possible is obtained, making every effort to expose at least four to five cm. of them. The ureter and pelvis likewise should be exposed. As soon as this is done the peripelvic and periureteral fat is stripped away using small forceps. This should be done very carefully and should be started as close to the aorta as possible and work towards the kidney. Care must be taken to watch for division of vessels, also for aberrant vessels. The tissue surrounding the vessels should be removed, both anterior and posterior. After the vessels are well exposed, they are denuded thoroughly of all connective tissue and all the tissues between them. All dissections should be made with instruments. It is a very tedious procedure and care must be taken not to rupture any of the vessels. Should this happen, suture of the opening should be made. The artery should be denuded and then the pelvis and upper ureter. The nerves will be seen as very fine fibrils, grey in color and can be raised under a dissector. In our cases only the arteries, pelvis and upper ureter were denuded of nerves. The veins were not denuded excepting in one case. No attempt should be made to pull the tissues if they seem fragile as a great deal of bleeding will result.

Results: We have studied seven cases of the so-called painful kidney in the past five years. All of these cases demonstrated definite retention with no dilatation of the pelvis or calyces, excepting in one case. No other pathological lesion was found in the urinary tract or any other tract. All of them have come to operation, six having a renal sympathectomy alone and one having a sympathectomy plus a nephropexy. The renal sympathectomy was performed by way of the lumbar route. Six had ether, and one had spinal anesthesia. It is more advisable to do them under general anesthesia as traction on the vessels and pelvis causes pain.

Thorough preoperative studies were made of all seven operative cases. All but one were relieved of their pain in five to 12 days after operation, never to return again. All symptoms of nausea and sensation of fullness disappeared. Postoperative studies have been made on all of them but one, and demonstrate complete emptying time. The cases range from four to five and one-tenth years since operation. All cases suffered a great deal prior to operation and to express in their own words, life is worth while at present. One case in which an associated renal ptosis was present and which in reality did not belong in this group, died six months after operation from a pneumonia.

Comment: There are several things of importance that one should remember in the handling of these conditions. It is of utmost importance to study thoroughly a case of an individual having pain in the lumbar region.

All other conditions from a general surgical, gastroenterological, orthopedic and gynecological standpoint should first be ruled out. Following the above studies, definite pathological lesions of the genitourinary tract should be considered. If no definite lesion of this tract is diagnosed then consideration of a disturbed neurogenic condition of the kidney should be considered rather than place the patient in the category of a neurasthenic which is frequently done.

Many cases have been overlooked, yet too promiscuous a diagnosis should not be made. It is of extreme importance to remember that the kidney is supplied by vasomotor nerves and that these are divided into vasoconstrictor and vasodilators. The vasoconstrictors are the most prominent. The action of these vasoconstrictors is the reason for a retention and then pain. Relieving the kidney of these vasoconstrictors should give relief. As to the length of time relief is going to be had it is questionable. Time will tell. One should not be too optimistic and yet not too pessimistic.

Conclusions: 1. Seven cases presenting essential renal pain (nephralgia) have been observed and treated;

2. Diagnosis is difficult and was made in each case after a thorough study and other conditions eliminated;

3. The symptoms are lumbar or abdominal pain, sometimes radiating, accompanied at times by nausea. There is retention of opaque solution in the calyces or pelvis for no definite reason;

4. Three of the cases had other operations for the relief of this pain without successful results;

5. Renal sympathectomies were performed upon all the cases. In one case, nephropexy was performed at the same time;

6. All cases but one have been free from symptoms ranging from four to five and one-tenth years after the operation.

BIBLIOGRAPHY

1. Bernard, Claude: *Lecours sur les Proprietes Physiologiques des Liquides de l'organisme,* 1859.
2. Burton, Opitz: Am. Jour. Physiol., 1916, XL, 437.
3. Harris, S. H. and Harris, R. G. S.: *Renal Sympatheticotonus, Renal Pain and Renal Sympathectomy.* British J. Urol. 2:367-374, Dec. 1930.
4. Harris, S. H. and Harris, R. G. S.: *Renal Sympatheticotonus and Renal Sympathectomy.* Canad. M. A. J. 24:235-239, Feb. 1931.
5. Hess, E: *Renal Sympathectomy; Report of Two Cases.* J. Urol., Balti., 1926, XVI, 191-196.
6. Hess, E: *Renal Sympathectomy.* Journal Urology, 20:333-344, Sept. 1928.
7. Newirt, K: Ztschr. f. Urol. Chir., 1922, XI, 75.
8. Papin, E. and Ambard: *Les Douleurs Renales et leur Traitement; Nephropexie; Enervation; Pyelostomie.* Bull. Med. Par., XI, 989.
9. Wharton, L. R. and Hughson, W.: *Denervation of Ureter; New Operation for Cure of Persistent Painful Ureteral Spasm: Report of Cases.* J. Urol. 25:145-157, Feb. 1931.

MODERN ANESTHESIA

In skilled hands, anesthetics are now safer than ever before in the history of the world. Dr. James T. Gwathmey presents the historical high light in the development of "General Anesthesia" in the February *Hygeia.*

By far the most outstanding discovery in anesthesia in recent years is the fact that preliminary medication increases the margin of safety to the lives of animals anesthetized, as compared with animals anesthetized without this treatment.

Ether, in the form in which it is now used, was discovered in 1540. It was not until more than three hundred years after its discovery that the agent was first employed successfully in a surgical operation. On October 16, 1846, William T. G. Morton, a dentist then a medical student in Boston, gave the first successful demonstration of any kind of anesthesia. The poet and essayist, Oliver Wendell Holmes, then professor of anatomy and physiology at Harvard Medical School, coined the word "anesthesia" to fit the occasion.

In the years following, many experiments have been made continuously in an effort to improve the methods already in use. Sometimes methods and agents are discarded for one reason or another, to be revived as their utility is enhanced by other discoveries. An instance of this is intravenous anesthesia, first employed in 1872 and then discarded. Lately it has come back into use for short operations and for putting a patient to sleep in his own bed, technically called preliminary medication. The final anesthetic is then given in the operating room without awakening the patient.

Ether remains the most serviceable agent for general anesthesia. It may be given by inhalation or with oil by rectum. Given in hypnotic dosage with oil, it is useful for whooping cough in children. When given in obstetrics, ether acts as an analgesic.

THE SIGNIFICANCE OF THE CARDIAC ARRHYTHMIAS*

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ANY disturbance of the normal cardiac rhythm causes a change in the pulse and in the heart sounds which usually announces the presence of some cardiac arrhythmia to the examiner. However, at times, these disturbances may be so profound and complex that the resultant arrhythmia may be very difficult to interpret. It is in these cases that the physician is more and more often seeking the assistance of the electrocardiogram. When the nature of the cardiac irregularity has been determined, even if the assistance of the electrocardiogram be at hand, its significance is often not fully appreciated. This paper will be concerned with a consideration of the significance of the cardiac arrhythmias from the standpoint of (1) usual underlying pathology and (2) clinical importance in relation to prognosis.

Sinus arrhythmia comes earliest in life and is the most benign of the cardiac arrhythmias. This speeding up of the heart rate during inspiration and slowing during expiration is common in children. That it is due to the variations in the vagus control associated with the respiratory movements is generally believed. Its importance lies in being able to recognize it as a harmless condition requiring no treatment.

Palpitation is the most common symptom of disturbances of cardiac function. It may be present in functional or organic disease and is most often due to some change in cardiac rhythm. The change in cardiac rhythm of most frequent occurrence is ectopic beats or extrasystoles, which may be of auricular or ventricular origin depending upon the location of the hyperirritable focus which generates the ectopic beat. The arrhythmia is most common in neurotic individuals and in heavy users of tea, coffee and tobacco. That it, as a rule, represents no disease of the heart is universally agreed upon and the benign nature of ectopic beats cannot be too strongly impressed upon those patients in whom they exist as the only abnormal finding. It is likely that the two types of precocious beats have the same prognostic significance but it is of interest that Bridgman recently said, "I feel that I would prefer to have the ventricular type, and would be less happy with the auricular precocious extrasystole, could I choose a particular kind of ectopic beat.[1]" The arrhythmia, granting that it usually is of no significance, cannot always be dismissed so lightly. This is particularly true in the older age groups when the ectopic beat is apt to be due to an area of myocardial degeneration. Precocious beats of ventricular origin may be encountered in coronary sclerosis and an increase in the frequence of their occurrence is a bad prognostic sign. The appearance of extrasystoles of the auricular type has been reported at times to precede the onset of auricular fibrillation and the frequent presence of ventricular extrasystoles following a coronary thrombosis is a common observation. Parsonnet and Hyman[2] believe that the development of ectopic beats following an incident which clinically has been a coronary thrombosis is an ominous sign. They found that 95 per cent of the cases developing this arrhythmia under such circumstances were dead in ten days after the extrasystoles were first noted. While this seems to be an overly pessimistic attitude it nevertheless contains a sound warning. Parsonnet and Hyman[2] have divided extrasystoles into two groups which they call (1) incidental and (2) fundamental, depending upon the presence or absence of

*Original paper from the Medical Service of the McMillan Hospital.

associated signs of cardiac disease. The presence of the ectopic beat should stimulate the physician to examine the heart carefully but no other evidence of disease being found the arrhythmia should be dismissed as of no significance.

An arrhythmia closely related to extrasystoles is "coupling" or bigeminy. In this condition each normal beat is followed by a ventricular extrasystole which results in an unusual coupling of a strong beat and a weak one. The arrhythmia indicates a highly irritable state of the ventricular musculature, occasionally found in severe myocardial degeneration, but most often occurring as the result of digitalis intoxication. It seems reasonable to assume that since overdosage of digitalis is often responsible for the development of coupling, an extrasystolic arrhythmia not far removed from ventricular fibrillation, there is some danger in administering digitalis to individuals with numerous ectopic beats particularly if there is other evidence of myocardial damage.

Paroxysmal tachycardia is a fairly common cardiac arrhythmia which is usually very distressing to the patient and often tests the therapeutic ingenuity of his physician to the utmost. The tachycardia may arise from an ectopic focus in the auricles, from the auriculoventricular conduction system, or in the ventricles.[3] Clinically the picture is the same irrespective of the point of origin of the arrhythmia. By many cardiologists, paroxysmal tachycardia is considered no more significant of cardiac disease than is the extrasystole. It is true that the condition is in the main functional and is most often not associated with any change in the heart muscle. Certainly the disturbance at the time of the attack is far out of proportion to its prognostic significance. However, it is only fair to say that paroxysmal tachycardia is not infrequently found in individuals suffering from mitral stenosis and cardiac enlargement, and more rarely is associated with foci of infection. In the individual attack the prognosis is good, normal rhythm being restored by one of a variety of procedures. Recurrence is likely at varying intervals and occasionally the arrhythmia persists to a fatal termination. The ultimate prognosis is dependent upon the demonstrable associated pathology with a minimum amount of importance being attached to the paroxysmal tachycardia itself.

Of the arrhythmias occurring after the age of forty, auricular fibrillation is probably the most common. However, this cardiac irregularity is not confined to the older age groups but varies in time of onset depending upon its etiology. In the young, rheumatic heart disease with mitral stenosis is almost the sole cause of this irregularity. Hamburger[4] has estimated that 66 per cent of the cases of auricular fibrillation are associated with mitral stenosis. DeGraff and Lingg[5] found that in rheumatic heart disease with mitral stenosis, auricular fibrillation was a late manifestation, in long standing cases, and usually meant a progressive down hill course. Those cases occurring in middle life are usually associated with mitral stenosis or with hyperthyroidism. When this arrhythmia complicates hyperfunction of the thyroid it is almost never possible to demonstrate any disease of the heart itself. Despite the fact that the heart may appear to be severely damaged during the seizure, when the thyroid disease has been treated, normal rhythm is easily restored and Hurxthal has demonstrated that there is rarely any evidence of residual damage. In the older age groups auricular fibrillation is most often associated with hypertension and is not commonly found in coronary or generalized arterial sclerosis. Yater[6] in 145 cases of auricular fibrillation found only two cases which showed evidence of coronary sclerosis and concluded that coronary sclerosis rarely accompanies auricular fibrillation. These findings are of interest in relation to the accepted dictum that hearts which are fibrillating are not often subject to coronary thrombosis. On the other hand Bishop[7] found fifty per cent of cases of auricular fibrillation occurring in individuals with hypertension and Levine and Brown[8] found this association in eighty per

cent of their cases. Yet there are numerous cases of this arrhythmia in which no pathology can be demonstrated as was shown by Levine and Friedlander. They reported 35 cases of auricular fibrillation, six per cent of a large series, in which there was no demonstrable pathology at autopsy. With the widely varying pathology of this irregularity in mind Willius[10] has nevertheless said "the mortality attending auricular fibrillation doubles and in some groups trebles that occurring in similar types of heart disease not complicated by this type of arrhythmia." However, in my experience there is a more cheerful aspect to the clinical significance of auricular fibrillation than one would gather from the above. When a patient is seen for the first time presenting the picture of severe congestive failure with extreme dyspnea, orthopnea, cough with frothy sputum and edema, it is a great relief to find the rapid, grossly irregular pulse of auricular fibrillation. Something can be done for these patients who, as a rule, respond so promptly to digitalization. The outlook would have been much worse had the patient been found to have a regular rhythm, particularly if the rate had been reasonably slow.

Auricular flutter is well known to be closely akin to auricular fibrillation and in general they have the same significance. Auricular flutter is more often a paroxysmal condition than is fibrillation and hence is less likely to have demonstrable underlying pathology in the heart. Whereas Levine and Friedlander[9] found six per cent of cases of fibrillation without pathology, they found twenty per cent of cases of flutter without demonstrable changes in the heart. It is also true that flutter is less often a persistent arrhythmia in the face of quinidine therapy or digitalization.

Heart block may be of varying degree and the production of an arrhythmia will depend upon the degree of block present between the auricles and ventricles. In first degree block the pulse is simply slow and in second degree block the delay in conduction between auricles and ventricles has advanced to the point at which the ventricle fails to be stimulated and a dropped beat results. If the block be still more marked the ventricle may respond to the auricle in a 1:2, 1:3 or 1:4 ratio. If the block be complete the ventricle assumes an idioventricular rhythm. Partial heart block is often and complete block occasionally due to acute infections such as rheumatic fever, diphtheria, influenza or pneumonia. Block may also be due to powerful vagal stimulation, to overdosage of digitalis, and to arteriosclerotic changes or a leutic gumma involving the cardiac conduction mechanism. The familiar picture of complete heart block is most often due to arteriosclerotic heart disease.

The partial block due to acute infections improves and disappears as the infection subsides, but its existence should encourage a lengthy convalescence. The block due to overdosage of digitalis disappears as the drug is withdrawn. Symptoms arising from heart block are most often due to a changing rhythm during which the heart, due to a varying amount of block, passes from a condition of partial to one of complete block or vice versa. It has been shown that complete heart block is consistent with a fairly normal state of health. The importance of the changing rhythm, which results in the Stokes-Adams syndrome, becomes evident in the light of this fact and the underlying pathology has added interest. This pathology is most often the result of arteriosclerosis, but a certain number of cases are due to vagal stimulation resulting from the carotid sinus reflex or irritation of the vagus at some point along its course. The carotid sinus is a dilatation of the carotid artery just above its bifurcation in the neck and much has been written by Weiss and Baker[11] and others concerning sudden fainting attacks brought on by pressure at this point through stimulation of the vagus nerve and transient heart block. That irritation of the vagus nerve by mediastinal tumors may result in transient heart block and fainting has been pointed out and discussed interestingly by Weiss and Ferris.[12] The prognosis in heart block is surprisingly good considering the distress which it may cause the patient. Com-

plete block may demand no treatment while partial block or the Stokes-Adams syndrome responds in most cases very well to proper therapy with atropine or adrenalin.

There are certain minor arrhythmias which should be mentioned because some of them are of considerable diagnostic and prognostic significance. Pulses alternans is simply the alternation of a strong and a weak heart beat without disturbance of time relation. This condition, once definitely diagnosed, suggests extensive myocardial damage. It is a much graver sign when occurring in a heart at a slow rate. The gallop rhythm is found chiefly in failing and severely damaged hearts. The protodiastolic type of gallop rhythm is of greatest significance. It is often observed subsequent to a coronary occlusion and indicates severe myocardial embarrassment. Its appearance is a bad sign and its disappearance can usually be accepted as evidence of improvement. The presystolic gallop rhythm is more apt to be the result of a split first sound or functional disorder but White has recently described it in the failing heart. The paradoxical pulse in which the radial pulse periodically disappears with inspiration and reappears with expiration has long been considered a sign of pericarditis with effusion. That it may occur in the absence of disease and is often due to pressure of the clavicle on the subclavian artery has been demonstrated and has reduced the significance of the arrhythmia considerably.

Summary: The cardiac arrhythmias are discussed from the standpoint of (1) their usual underlying pathology (2) clinical importance in relation to prognosis. Symptoms resulting from a cardiac irregularity are often out of proportion to the severity of the underlying pathology and are rarely indicative of the extent of this pathology. The prognostic importance of an arrhythmia bears little relation to the grossness of the disturbance and is approximated from a knowledge of the pathology involved and a previous experience with a similar type of case.

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BIBLIOGRAPHY

1. Bridgman, E. W.: Medical Clinics of North America, May, 1935. 1545-1558.
2. Parsonnet, A. E. and Hyman, A. S.: *Applied Electrocardiography*. The MacMillan Co. 1929.
3. Lewis, Sir Thomas: *Diseases of the Heart*. The MacMillan Company. 1933.
4. Hamburger, W. W.: Cecils Textbook of Medicine W. B. Saunders Co., 2nd Edition, 1930.
5. De Graff, A. C. and Lingg, Claire: The American Heart Journal, June, 1935.
6. Yater, Wallace M.: The American Heart Journal. February, 1935.
7. Bishop, Louis F.: The American Heart Journal. February, 1935.
8. Levine, S. A. and Brown, M. G.: The American Heart Journal. February, 1935.
9. Levine, S. A. and Friedlander, R. D.: The New England Journal of Medicine. October 4, 1934.
10. Willius, F. A.: *Auricular Fibrillation and Life Expectancy*. The Minnesota Medical Journal 3:365, 1920.
11. Weiss, Soma and Baker, J.: *The Carotid Sinus Reflex in Health and Disease*. Medicine 12:297, 1933.
12. Weiss, Soma and Ferris, Eugene.: Archives of Internal Medicine, December, 1934.

HERNIA AND HEALTH

Strictly speaking, the protrusion of any organ or part of an organ through the wall of the cavity in which it is usually contained is called a hernia. Dr. Frederic Hagler discusses "Hernia" in the February *Hygeia*.

In the human body there are naturally weak spots in the abdominal wall through which hernias develop. Additional reasons for the prevalence of hernia probably are to be found in bad posture, poor diet, lack of exercise and respiratory disease. Four of these weak spots are located at the crural canal or femoral ring in the abdominal wall; the inguinal canal; immediately above the fold of the groin; the navel, and the midline of the abdomen between the navel and the tip of the breastbone.

A hernia is made up of three parts, the sac, the covering and the contents of the sac. It is usually accompanied by pain of varying intensity. The appearance of a lump is characteristic. Aside from the discomfort and inconvenience of hernia the most serious risk is that of strangulation. The narrow neck of the sac so compresses the protruding organ as to interfere with the blood supply. In the case of the intestine the sac can also prevent the passage of its contents.

One of three courses may be followed by the patient with hernia: nothing at all may be done, an unwise course since nature can seldom effect a cure; the hernia may be retained by a suitable appliance; the treatment may include surgical operation, or "radical cure." The last method is more safe and more certain than the other two, and a good chance for a permanent cure can be sometimes promised.

ANCIENT EGYPTIAN MUMMIFICATION AND ITS EFFECT ON MEDICINE, PATHOLOGY AND THERAPEUTICS*

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IT would be impossible to discuss this interesting subject without first touching on the theories dealing with the origin of mummification. Preserving the dead is, and always has been an art, one in which the ancient Egyptians seem to excel to the present day. In reviewing the literature there is a curious lack of reference to its origin and development, although many historians have been attracted to this subject and have written at length, each apparently contradicting the other. Herodotus, Diodorus, Homer, the Greek physician Dioscoidoes, an Arab writer of the twelfth century, and many others have hatched their own ideas of the original motives of the process of embalming.

All physicians know that in many instances Nature is a good doctor if let alone, and apparently she was a good embalmer during predynastic times in Egypt. During this time it was the custom to bury the dead draped in a very thin muslin in a shallow grave along the Nile, where dry, hot, sand came in direct contact with the body, and by a process of dessication, preserved the bodies. Jackals raided the Egyptian burying grounds, preyed on the dead and revealed the preservation of the bodies thus buried. Two writers state that during the predynastic period bodies of men were buried in an upright or semisitting posture in the hot sands along the banks of the Nile, while those of women were thrown to the crocodiles in the river. Male babies were buried as men, while female babies were considered as crocodile food, and so treated.

Maybe Nature's preservation of the dead bodies strengthened the Egyptian's belief in the survival of the dead. At any rate he began to erect tombs in which could be stored all the necessities of life so that the body would be preserved for the return of the soul; but when these huge air-filled tombs were substituted for Nature's hot sand graves, the bodies were no longer preserved, and the object of the more lavish equipment was defeated. By this time the prevention of body decay after death became a cardinal article of faith in order to secure a continuance of existence.

Of course this is only a theory, but from the literature it seems to be the predominant one. Or again, we might think of a priest, or a prophet, who came before the reign of the Dynasties, sponsoring a faith in which the survival of the dead was the paramount feature and the preservation of the dead body the sole aim of all who adopted this faith. Without a doubt this was first known only to the kings and they were the only persons embalmed. The secret next passed to the priests, who, when their turn came, were embalmed, and finally all the nation embraced the faith so that even the poor shared in it.

We should now turn to the ancient science of embalming, and its direct effect on the sciences of medicine, pathology, and therapeutics. From the literature we find confusing and vague accounts of this ancient science, but the one given by Herodotus during or about the time of Pharaoh Necho's reign is complete and detailed. As there seems to be no good reason to reject it, a summary of this masterly description will now be given.

There were two methods, one being more costly than the other. The more costly method was meted out to the Kings and those so fortunate as to have the price. This more elaborate method was as follows:

*Read before the staff of Grace Hospital, Welch, on November 4, 1935.

The body as a whole was soaked in strong salt solution for several days to remove the skin, a narrow strip just proximal to each nail of fingers and toes was wrapped with a waterproof material so that the nails would not be removed in the process. All the viscera were removed and treated with preservatives, the body cavities were irrigated with strong salt solution for several days and the cavity contents replaced. The extra spaces were packed with the preserving material which consisted of earth, salt, and various aromatic plants, and the incisions closed with a continuous suture. The brain was removed through the nose by a hook or snare, and the cranial cavity was packed with the same material. Great care was bestowed upon the eyes, ears, inside of the mouth, and nostrils, the latter being plugged with a paste made of pounded wood, pumice, and resin. Then the body was smeared with an unguent of fat or butter with resinous products. Possibly this latter consisted of oils obtained from the cedars of Babylon. It was dried in the sun or over the fire, and finally bound in linen or some similar material. The layer next to the skin was often dyed red. A layer of fat and resinous products alternated with a layer of cloth. Each coat required from one to two days to dry. As many as twelve to fifteen layers of wrappings have been seen. The entire process required from 20 to 30 days and cost in present day values from $2500 to $3000.

The cheaper method of embalming consisted of injecting the body with some corrosive fluid, most likely Euphorbia juice, and then sun-curing it.

The embalmers must not be forgotten in this review for they were considered unclean and required to live in segregated colonies and were not allowed to associate with the general population. These men during their tasks of embalming were constantly being reminded of the similarity of human structure to that of animals used for food. It may be that our supposition covers too much territory, and possibly an exact anotomical knowledge was not gained, but the long familiarity with the organs of the human body and their homologies with those of other animals apparently could not have failed to influence the growth of knowledge of human anatomy.

In fact, we find in the records of the Edwin Smith Papyrus and the Ebers Papyrus that the Egyptians had an exact knowledge of certain parts of the body, the relationship of certain parts and their physiological function, knowledge which for many centuries the ancient Greeks lacked.

But more important than the positive gain in knowledge which the practice of mummification effected was its influence in other ways on the progress of anatomy and the general science of medicine.

The prejudice of systemic dissection of the dead body was broken down among the Egyptian people during the practice of mummification for thirty centuries thus putting them far in advance of Greek physicians. In fact, public opinion was such that nothing stood in their way, and they were able to dissect in Alexandria from the third century B. C. onward, something that was not even thought of in any other part of the world.

From records we see that their chances of dissection were far better than ours for no less than thirty thousand mummies have been discovered to date. Therefore, one might state that the number of bodies embalmed and dissected was countless.

Aside from the direct influence of various kinds of knowledge and experience on the history of medicine, the art of mummification probably contributed most to the theory of diseases and their cure. For the magical procedure and treatment of diseases of this time was intimately linked with the belief that the practice of mummification was imperative.

The business of both the physician and the embalmer was to devise means of protecting the individual from dangers to his existence, the magical procedures whatever they were, were for the purpose of giving life or a renewal of the vital substance which was

thought to be wanting in cases of sickness and in what we now call death. But a detailed discussion of these beliefs would require too much time and space.

It is only correct to state that the number of abnormalities in the bodies exposed to mummification must have been great, and it would naturally follow that these conditions attracted the attention and stimulated the interest of the entire embalming staff, who were supposed to be the best intellectuals of the nation even though they were segregated and passed with fear when met.

Taking the easiest example, the embalmer who opened the abdomen and extracted the viscera must have been astonished to find the spleen greatly enlarged at times, as happened in what is known as Egyptian splenomegaly, which must have been present when Pharaoh Necho reigned from his mud and straw palace. Evidently it was present for Bilharzia, the causative factor, was found in one of the mummies. The embalmer must have been attracted by this huge spleen; possibly he tried to dissect it and to find the cause of its hypertrophy. This simple example will serve to show the effect of mummification on the progress of pathology. Although we did not receive a detailed description of the progress made in pathology by the findings of these abnormalities, there is no doubt that they were recorded.

Numerous calculi have been found in mummies of different periods. Those of predynastic times furnish bladder stones, and kidney stones occur in bodies of the Second Dynasty. A thorough examination of the first vesical calculi was made by Professor Shattock of the Royal College of Surgeons, London, when a thorough examination failed to reveal any trace of Bilharzia eggs. But years later, Sir Armand Ruffer found Bilharzia eggs in a mummy of the twenty-first Dynasty. (British Medical Journal, January 1, 1910.)

Many cases of arterial disease have been found in the various mummies examined. While the mummies of the priesthood of Amen (Twenty-first Dynasty) were being examined, a typical case of Pott's disease with marked disfiguration of the chest cage and a large psoas abscess were found. No ancient Egyptian remains reveal any pathology which would indicate rickets or syphilis. No bone injury or tooth manifestations indicate or resemble syphilitic pathology. One might conclude, then, that syphilis in Egypt is not very old.

The cemetery of the Gaza Pyramids (Fifth Dynasty) furnished a specimen of a large osteosarcoma of the femur and two specimens of sarcoma of the head of the humerus, but no evidence of true cancer occurs until comparatively recent times (Byzantine), when a malignancy of the base of the skull and of the sacrum, respectively, were found which are indicative of epithelioma of the nasopharynx and rectum in each case. The mummy of Pharaoh Siptah of the Nineteenth Dynasty furnished the one and only talipes found.

One perfect example of true gout has been found. The subject was an elderly man. Large masses of white concretions were found on the metatarsal bones of the big toe. Also the metatarsophalangeal joints were involved as well as the knee joints and patellar ligaments.

Aside from the evidence of true gout, osteoarthritis was common. The shoulder joints, the vertebra, and the left side of the jaw were most frequently involved.

In Egypt as well as in Nubia, the ordinary form of dental decay was a rarity, and the poorer classes were without it until modern times. But with luxury came dental decay. When the Hearst expedition excavated the Giza Pyramids, more than five hundred skeletons of aristocrats of the time of the pyramids' builders were examined, and tartar formation, dental caries, and abscesses were as common as today. From these findings we believe tooth stopping was not practiced in ancient Egypt despite frequent statements to the contrary.

The bone and joint affections commonly grouped as rheumatoid arthritis were found so frequently in bodies of all periods, that it

is safe to say it is the bone disease par excellence of the ancient Egyptian and Nubian.

In a mummy of the Byzantine period in Nubia, a case of chronic appendicitis was found with adhesions extending to the opposite side of the pelvis, while in an adjoining body was found a collapsed left lung which was firmly bound to the chest wall by old adhesions.

One of the priestesses of Amen suffered from a pelvic abscess and multiple bed sores which the embalmers had carefully concealed under thin sheets of gazelle skin.

The body of Rameses V shows that he suffered from a skin disease, the appearance of which strongly suggests smallpox, but cannot be diagnosed definitely.

Bone fractures, especially of the forearm, were very common. It is not surprising to find splints for this type of injury as early as the Sixth Dynasty. The same type of splints are in use today in the Sudan and in Abyssinia. Only one case of leprosy has been found, and it was in an early Christian date.

As to surgery among the ancient Egyptians, the Edwin Smith Papyrus suggests that there was considerable surgical knowledge in Egypt seventeen centuries before the Christian era, but apart from the use of splints there is a complete absence of evidence of any surgical procedures in any of the bodies examined up to the present time. This total absence of surgical procedures could be explained on the belief that the body before death was sacred, and no one was allowed to operate on it. This is a feasible theory since it is difficult to imagine that those people who have demonstrated a great deal of intellectual superiority could have failed to know that incising an abscess would have relieved the excruciating pain.

The science of pharmacology was very much affected by the ancient embalmers during their study and research involving substances they used in the process of embalming. The antiseptic and preserving qualities of many resins, balsams, minerals, and vegetable substances were thus brought to light and afterwards led to their being included in the Pharmacopeia. It may safely be stated that their vast store of knowledge of the medicines and of their special therapeutic and pharmacological properties, was far superior to ours at the present time. In other words, if an Egyptian embalmer could emerge from his mummy to appear and lecture before a group of present day experts or specialists, they would soon realize that they were yet in their swaddling clothes.

The use of "mummy" as a drug was widespread in Europe from the twelfth to the seventeenth centuries, and its use in some countries lingered for a hundred years later.

Its supposed virtue was originally based on the medical properties of natural bitumen obtained from the Dead Sea and surrounding area. During the Middle Ages, mummy was obtained from Egyptian mummies which were believed to have been prepared with bitumen. Even to the present day this is a current belief, but untrue, for the embalming material was a mixture of resins and vegetable substances. If bitumen was used in embalming, its presence has so far escaped scientific research. Herodotus or Diodorus do not mention bitumen in their well known descriptions of Egyptian embalming.

Since the supply of bitumen was obtained from mummified bodies, the virtue of the drug was transferred to the mummy itself. Thus, the association of bitumen and mummy was broken and medicated flesh was substituted.

"Mumia" from which our English word "mummy" is derived, is of Persian origin, and originally meant wax, but was also used to denote the natural bitumen which flowed from the "Mummy Mountain."

Avicenna (980-1037) says mumia has value in the following conditions: eruptions, abscesses, concussions, paralyses, fractures, infections of the throat, lungs, and heart, besides being a panacea for all stomach disorders, and an antidote for poisons. It should be noted that he never used it as a drug alone,

but always mixed it with milk, wine, butter, oil or some vegetable.

As the demand for the human mummy increased the supply became more restricted, and the Egyptian government naturally prohibited this traffic in dead bodies. Hence here was a fertile ground for fraud which was carried out on a large scale. If the genuine bodies could not be obtained, the purveyors had to meet the demands in other ways. They solved the problem by selling spurious substitutes.

As to this point, we may quote from Guy Fontaine who was physician of the King of Navarre and who had the following experience while visiting Alexander. A Jew, a principle figure in the mummy trade, was interviewed by him. After exhibiting his stock, Fontaine was informed that the trader had prepared all the bodies, some forty in number, during the last four years. His practice was to collect the bodies of slaves or any body obtainable, open the bodies, fill them with bitumen through the natural body openings, dry them in the sun and sell them as real Egyptian mummies. The trader was then asked if any of the subjects had died of plague or other diseases, and his complacent answer was that so long as bodies were obtained it did not matter to the one preparing them in what condition they might be. Thus exploitation entered the masterful art.

A very curious method of treatment in ancient Egypt should not be overlooked. It is the use of a skinned mouse administered to children in a moribund condition. In the alimentary canal of several children in the predynastic cemetery of Neg-El-Der remains of this small animal were found which suggest that it had been skinned and administered as a final medicine shortly before the exitus. To the present day the mouse as a medicine for children is used and has a wide geographical distribution. The survival of this treatment to the present as a remedy which was in use sixty centuries ago is without parallel in the history of medicine or pharmacology.

It would seem fitting to close this review with the exact quotations of Sir Thomas Browne (1605-1682) writing in a sober vein in reference to fame after death:

"Egyptian ingenuity was more unsatisfied, contriving their bodies in sweet consistencies, to attend the return of their souls. But all was vanity, feeding the wind, and folly. The Egyptian mummies, which Cambyses or time hath spared, avarice now consumeth. Mummy is become merchandise, Mizraim cures wound, and Pharaoh is sold for balsams."

BIBLIOGRAPHY

1. Dr. A. M. Bayoumi: *Effect of Mummification on Medicine and Pathology.* Journal of Egyptian Medical Association. July, 1934, pp. 586-593.
2. Warren R. Dawson: *Contributions to the History of Mummification.* Proceedings of the Royal College of Medicine. April, 1927; Vol. XXX, No. 6, pp. 832-854.
3. Warren R. Dawson: *Mummy as a Drug.* Proceedings of the Royal Society of Medicine, November, 1927, Vol. XXI, No. 1, pp. 34-39.
4. Dr. C. S. Simpkins: University of Tenn., College of Medicine, Memphis, Tenn.

SEASICKNESS, A BUGBEAR

One of the simplest and most effective remedies for seasickness is to lie down, the sooner the better. Dr. Claude Lillingston tells how to combat the well known malady in the third article of the series, "Health Hints for Travelers" appearing in the February *Hygeia.*

Another suggestion is for the traveler to adapt his own movements systematically to those of the ship. He should breathe in slowly and deeply as the boat rises and breathe out slowly when it sinks.

Should the potentially seasick traveler starve himself? Genuine starvation provokes acidosis, which is the last thing in the world to be encouraged. It is a far cry, however, from starvation to normal nutrition, not to mention supernutrition.

There is no short-cut to the prevention and cure of seasickness; if there were it would have been discovered long ago and proclaimed from the housetops. Any druggist can furnish a list of the drugs which, in a certain proportion of cases, have proved effective against seasickness. All that the so-called inventor of a remedy has to do is to combine several of these drugs in a single preparation, making sure there are no incompatibles among them, and the trick is done. The traveler who keeps well during a rough passage after having taken some proprietary remedy is its staunch friend for life, or until it lets him down on the next voyage.

TREATMENT OF RECENT WOUNDS*

By WILLIAM M. JUNKIN, M. D., F. A. C. S.
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UNTIL medicine and surgery become exact sciences there will be differences in methods of treatment. In general the more accurate the knowledge on the subject is, the fewer are the methods employed. There is no longer much difference in treating specific diseases. Until a specific is known the best treatment is based on experience or reason. If both are brought to bear, the treatment is apt to be good. It is believed that the method for treatment of wounds about to be described satisfies both of these conditions and may even be the specific.

By the treatment of recent wounds is meant the treatment of wounds within a relatively short time after the injury. This will usually be from about one to six hours and probably not more than twelve.

No claim of originality can be made for this paper. The chief of our staff called attention to an article in the September, 1934 bulletin of the American College of Surgeons by Dr. Sumner L. Koch entitled "The Immediate Treatment of Compound Injuries" and the method we have been using since then is essentially the same as that described in his article. We had used the method before, but not routinely. For several years some physicians have employed a similar treatment. Nevertheless, little has been written on the subject.

The treatment of recent wounds we recommend is as follows:

1. Cover the wound with sterile gauze or similar material and scrub the surrounding skin with liquid soap and water.

2. Cleanse the wound itself with soap and water and then irrigate it with sterile normal saline.

Most wounds are then sutured, but when too great a time has elapsed before treatment is instituted, closure may be delayed a day or two. A few interrupted sutures may be passed immediately and tied at a later time. A rubber ear syringe makes a useful irrigating appliance for many wounds. A solution of neutral soap is desirable as it is not very irritating and causes little pain. Water may do as well as normal saline and is more accessible out of the hospital where many of the less serious wounds are treated.

There are still many champions of chemical sterilization of wounds and some are physicians of undisputed reputation. Among the favorite disinfectants employed in treating wounds are: Tr. iodine, two per cent mercurochrome, Scotts' solution, and alcohol.

The "soap and water" treatment may be too simple to appeal to the imagination and is far from being spectacular except in end results. A fable is told in Dr. Conwell's famous lecture "Acres of Diamonds" in which a man left his home in quest of fortune only to return after years of aimless wandering to find one day hidden treasure in his back yard. Soap and water have been known to the civilized world for years, but have been regarded as too common to use in wounds until the past few years and this practice is not universally accepted yet. However, its use in cleansing wounds is not lacking in strong and convincing support. Moorehead in his book, "Traumatotherapy", writes: "It should be axiomatic that every wound not made with surgical intent is already infected and should be so regarded. If this be true, how important it is to sterilize adequately accidental wounds by the liberal, but gentle use of soap and water. We should not rely on antiseptics however actively they are recommended or appealingly advertised." Christopher in "Minor Surgery" states: "In some of the Ger-

*Read before the West Virginia State Medical Association at Wheeling on May 6, 1935.

man clinics, cleansing wounds by chemicals is being abandoned more and more." Kanavel in an article entitled "Hand Infections in Industrial Accidents", states: "In severe injuries we avoid primary antiseptic treatment, cleansing the wound only with soap and water unless grease is present, when some solvent is also used." In answer to a letter, Dr. Koch wrote: "There are an abundance of clinical observations that help to strengthen the belief that soap and water cleansing is a very effective method of cleansing wounds and of preparing them for operation."

It has been shown to the satisfaction of the majority of physicians, that disinfectants sufficiently strong to kill the more virulent germs, destroy tissue. The resulting necrotic cells form a culture medium for germs and probably lower the local resistance. It is conceded that it is impossible to destroy all the germs in wounds with disinfectants. Healthy tissue can usually overcome a few germs without suppuration.

The aim of this method is to remove the germs and debris as thoroughly, but as gently as possible and to rely on nature for the rest.

An attempt has been made to test the method experimentally. Four male guinea pigs were used. In each case the abdomen was shaved and cleaned. Small incisions of approximately equal size were made just into the muscular layer. In number three and four, the wounds were also pinched with forceps. Blood agar cultures of staphylococcus albus from a carbuncle were smeared into the depth of the wounds. The wounds were immediately dressed with sterile gauze. From about one to two hours later the wounds were treated by the several methods and again dressed and secured at the edges with collodion.

The results of these experiments are shown in the following table:

Number and Identification	Interval before Treatment	Time of last Observation	Method of Treatment and Result.					
			Tr. Iodine		2% Mercurochrome		Soap and Water Saline.	
			Gross Pathology	Microscopic	Gross	Micro.	Gross	Micro.
1 Brown-White Male	1 hr.	32 hrs. (died)	Slight Pus Slight Swelling	Round Cell Infiltration			No pus No Swelling	Round Cell Infiltration
2 Gray-White Male	1 hr.	6 days	Pus Marked Swelling	Suppurative	No pus Slight Swelling	(Spec. Lost)	No pus Slight Swelling	Good Healing
3 Gray Male	2 hr. 15 min.	4 days	No pus Slight Swelling	Good Healing	Thick pus Slight Swelling	Suppurative	No pus No Swelling	Good Healing
4 Brown-White Male	2 hr. 15 min.	4 days	Thick pus Slight Swelling	Marked Round Cell Infiltration	Thick pus Slight Swelling	Marked Suppuration	No pus No Swelling	Good Healing

SUMMARY

Method of Treatment	Times Used	Successful Gross	Successful Micro.	Failure Gross	Failure Micro.
Tr. Iodine	4	1	1	3	3
2% Mercurochrome	3	1		2	2
Soap and water Saline	4	4	3	0	1

In criticism of the experimental data it should be mentioned that besides being too small a series there was room for error. No. 1 died about 32 hours after treatment and there was some delay in removing tissues and

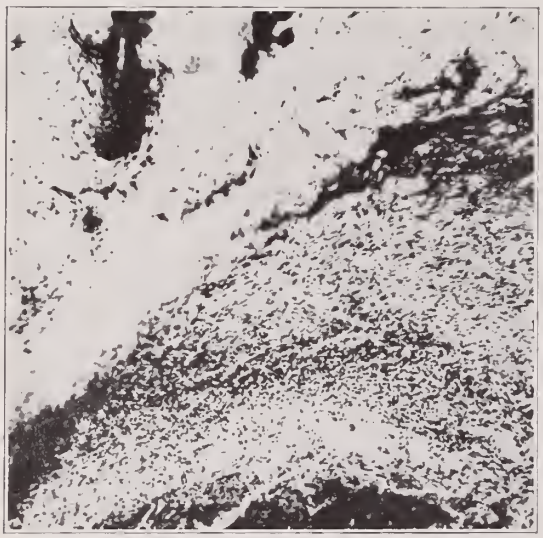

FIG 1.—No. 4 Pig. Treated with Tr. Iodine. Marked round cell infiltration.

possibly slight postmortem changes. No. 2 pulled part of his dressings off in about one half hour from the time of treatment and these wounds could have become contaminated. No. 3 and 4 were perhaps as free from error as possible experimentally.

In spite of inadequacy and allowing for error, the evidence is in favor of the soap and water treatment.

Our clinical cases, numbering about 45 to date, also comprise a rather small series. Since adopting the soap and water treatment, there has been no consequential suppuration of recent wounds. No doubt there will be sooner or later. If so, it may well be a personal factor rather than a material one.

A few of our clinical cases will serve to illustrate. They have been selected for the most part to show a variety of conditions:

Case 1: A farmer, C. K., aged 32, was seen in the out-patient department January 30, 1935. He had cut his foot with an axe about an hour and a half before, while chopping small timber. There was a transverse incised wound about two inches long on the inner aspect of the right foot penetrating the articulation between the navicular and first cuneiform bones. The wound was covered with sterile gauze and surrounding skin scrubbed with soap solution and water. The wound was then cleaned with soap and water and afterwards flushed with sterile saline. The fascia was closed with O chromic catgut and the skin closed with interrupted silk sutures. Eight days later the skin close to the wound was slightly blue and there was a small amount of serum, but no pus. On the twelfth day after injury the wound appeared to be healthy, the color of the skin was normal, and there was no swelling. He was not seen after this, but reported by his sister as all right and able to work.

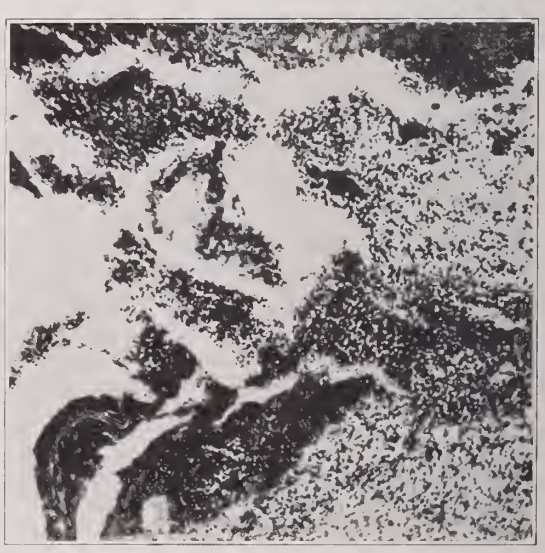

FIG. 2—No. 4 Pig. Treated with two per cent mercurochrome. Marked suppuration.

Case 2: Hosp. No. 9469. This is another incised wound of the foot also caused by an axe. The patient, a woodsman, aged 24, entered the hospital January 23, 1935. He had been injured about 30 hours before admission. There was a longitudinal incised wound on the dorsum of the left foot extending into the base of the great toe. It had been treated according to the patient's statement by the family physician about half an hour after the injury

with thorough application of tincture of iodine after which the skin was closed with metal clips. When first admitted, no local treatment was instituted except elevation of foot on pillow. He was given tetanus antitoxin. On the next day there was considerable swelling and most of the clips pulled loose. On the third day there was free purulent drainage which continued for two weeks, gradually subsiding and filling in with granulations. On the eighteenth day the patient was allowed to leave the hospital for further care by his family doctor. At this time there was a gap one and one-fourth inches wide which probably resulted in considerable scar formation and a long period of disability.

Case 3: Hosp. No. 9413. A coal miner, aged 24, entered the hospital December 27, 1934, with the left foot mashed by the wheels of a mine motor. The foot was considerably swollen. There was a two-inch laceration on the dorsum and a four-inch laceration on the plantar surface. Both wounds were ragged and deep. Röentgenogram showed fractures of the second, third, fourth and fifth proximal phalanges with overlapping fragments. The wounds were given the soap and water treatment

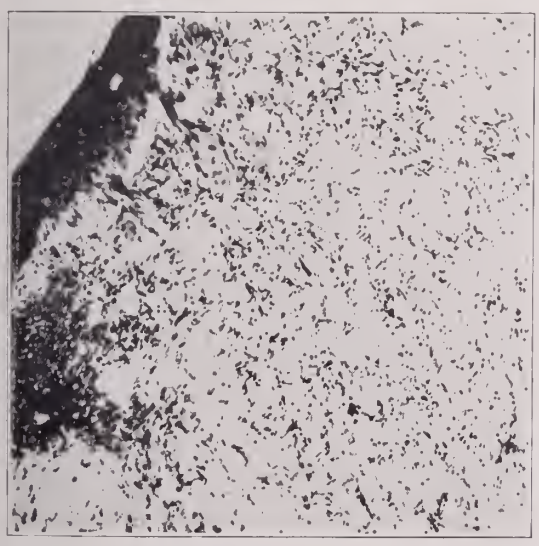

FIG. 3—No. 4 Pig. Treated by soap and saline method. No infection.

as in Case No. 1, after which they were closed loosely with a few interrupted silk sutures. The time of treatment was about three and a half hours after injury. On the following day traction was applied to the toes by fastening rubber bands to the toenails. On the seventh day sutures were removed and the wounds appeared in healthy condition. There was only slight swelling of the foot. A light plaster cast was applied to the foot and traction appliance incorporated. One month from the time of injury, cast and traction were removed. The wounds had healed with little scarring and there was no swelling.

Case 4: Hosp. No. 9198. A man, aged twenty, was admitted to the hospital at 11:30 p. m., on September 15, 1934, in slight shock from an incised wound of the abdomen received in a fight. The cut was transverse five inches long in the left upper abdomen below the eighth rib. Part of the stomach and omentum were protruding through the wound and there was slight bleeding from the omentum. He was treated for shock and about an hour later, approximately three hours after injury, he was taken to the operating room, anesthetized with ether, the protruding viscera protected with a sterile abdominal pack, and the skin surrounding the wound thoroughly cleaned with soap and water. The protruding stomach and omentum were gently washed with soap solution and water and then thoroughly flushed with sterile water. After tying off bleeders, the viscera were returned to the abdominal cavity. The abdomen was explored and no other injuries found. The wound was closed in layers. On the first two postoperative days, the temperature was about 101 degrees and the patient had a cough with some hemoptysis. There were a few moist râles in the bases of both lungs. This condition rapidly subsided and from about the fifth postoperative day his convalescence was uneventful. He left the hospital on the twelfth day with the wound cleanly healed and general condition apparently very good. He returned about one month later, ready to go to work.

Case 5: Hosp. No. 9219. A farmer, aged 21, received a head injury in an automobile accident September 30, 1934, and entered the hospital about 9:00 p. m., half an hour after injury. He was in a somewhat stimulated condition and restless. He said that he was only unconscious a moment. There was bleeding from a deep ragged laceration of the left temporal region and from a very extensive laceration of the ear. After shaving the hair, the patient was anesthetized with ether. The lacerations were given the standard soap and water treatment. Three ragged bone fragments were removed, leaving a space of about three-fourths inch in diameter. The dura had been lacerated and brain substance slightly damaged. The bone edges were smoothed. The dura was loosely closed. Fascia and muscles were closed with continuous catgut sutures and the skin with interrupted silk. Lacerations of the ear

were also secured with interrupted silk. His convalescence was quiet. For about three days the maximum temperature was 100 degrees or less and after this it was practically normal. On the fourth day, his pulse rate was 50, but there were no other changes. All skin sutures were removed on the sixth day and the wounds at this time were in healthy condition. On leaving the hospital he was to remain in for a few weeks under the care of his family physician. He returned about a month and a half later and stated that he had felt well in all respects.

Case 6: Hospital No. ..... A sawmill worker, aged 22, entered the hospital March 9, 1935, due to a severe injury of the left upper extremity. He stated that the carriage caught his leg and threw him against the saw. His hand appeared chewed up. The main part of the second, third and fourth fingers were severed and the fifth finger sawed almost half through the dorsal surface. In addition the wrist was completely dislocated and there was a fracture of the lower third of the radius with overlapping of fragments. About an hour and a half from the time of injury the patient was in the operating room under ether. The dislocation of the wrist was reduced and the usual soap and water and saline cleansing instituted. Debridement and plastic repair was done. An unsuccessful attempt was made to reduce the fractured radius. The postoperative course was uneventful except for rather marked swelling of the hand and forearm. The temperature was normal most of the time and never exceeded 99.4 degrees. On the eleventh day an open reduction of the radius was done at which time a tendon and some muscle were found wedged between the fragments. Following the second operation the patient ran a low grade temperature for about three days, but the swelling of the hand and forearm subsided rapidly. Four days after reduction the temperature was normal, the swelling only moderate, wounds healthy and the fluroscope revealed the bone fragments in good position. He was allowed to leave the hospital and upon returning four days later, the remaining sutures were removed. The wounds at this time appeared healthy.

Summary: The conclusion is that cleansing with soap and water followed by irrigating with sterile saline or water has proved to be an effective treatment of recent wounds in a small series of cases, both experimentally and clinically.

BIBLIOGRAPHY

Fantus, B.: *The Therapy of the Cook County Hospital.* (Therapy of Fresh Accidental Wounds) J. A. M. A. 1934, ciii, 108-109.

Koch, Sumner L.: *Treatment of Compound Injuries and Infections Resulting From Them.* Bull. Am. Coll. Surgeons, 1932, xvi, 3.

Koch, Sumner L.: *The Immediate Treatment of Compound Injuries.* Bull. Am. Coll. Surgeons, 1934, xviii, 3.

Newell, E. D.: *The Treatment of Sterile, Contaminated and Infected Wounds.* South. Med. J. 1934, xxvii, 53-58.

Royster, H. A.: *Wounds and Their Treatment.* South. Med. J. 1931, xxiv, 837-841.

Kanavel, Allen B.: *Hand Infections in Industrial Accidents.* S. G. & Ob., February 15, 1935, Vol. LX, No. 2A, 568-570.

Moorehead, John J.: *Traumatotherapy,* 1931, Chapter 11, page 503.

Christopher, Frederick: Minor Surgery, Second Edition, 1932, chapter 2, page 33.

FIRST CANCER CURE

While the cure of early cancer is recognized as a comparatively recent achievement, Dr. James A. Tobey brings out the interesting fact that a cancer was successfully cured some twenty-five centuries ago. His article "Cancer Among Princesses and Queens of History" appears in the February *Hygeia.*

While the celebrated Greek physician Democedes was a prisoner in warlike Persia in the middle of the sixth century before the Christian era, he was brought into the court of Darius I, who greatly needed medical help. Democedes rendered valuable medical aid to the king but performed an even more conspicuous service for his consort, Queen Atossa. The Greek doctor succeeded in curing a cancer of the breast. As reward he was sent on a secret mission to Greece, during which he escaped and returned to his home.

The ailing Atossa was perhaps the first in a long line of queens who have been known to be victims of cancer. Throughout recorded history the disease has harassed those in high positions as frequently and as impartially as it has the obscure.

Among the famous royal women of history mentioned in the article as having suffered from cancer was Anne of Austria, wife of Louis XIII of France and mother of the reigning king, Louis XIV. She died in 1666 from breast cancer. The unfortunate queen had waited too long to seek even such treatment as was available.

LEUCORRHEA DUE TO TRICHAMONA VAGINALIS*

By A. P. HUDGINS, M. D.
Charleston, W. Va.

LEUCORRHEA is a whitish, viscid discharge from the vagina and uterine cavity. It is more broadly used to include any vaginal discharge other than blood.

In making a study of a vaginal discharge, there are a number of facts to be ascertained:

1. Onset: Whether sudden or gradual. With what the onset was associated. For example: Following miscarriage or delivery accompanied by abnormal pain whether menses have varied since discharge started. The possibility of venereal infection.
2. Color: White, yellow, greenish, blood tinged. Whether the color has varied or not.
3. Consistency: Thin, watery, thick, foamy, bubbly.
4. Amount: Profuse, scant. If variable, to what the increase is associated or attributed.
5. Odor: If foul, whether slight or marked.
6. Cutaneous irritation: Whether there is chafing or itching associated with discharge.
7. Treatment received and results noted.

The causes of leucorrhea may be divided into two broad groups. (1) Local conditions, (2) Constitutional factors.

(1) Local conditions:
- A. Infections—
  - a. Venereal:
    1. Gonococcus.
    2. Bacillus ducrey.
  - b. Pyogenic:
    1. Staphylococcus.
    2. Streptococcus.
    3. B. coli.
    4. Pneumococci.
    5. Catarrhalis.
  - c. Protozoal:
    1. Trichamona.
    2. Amoeba urogenitalis.
  - d. Verminal:
    1. Oxyuris.
    2. Ascaris.
    3. Echinococcus.
  - e. Miscellaneous:
    1. Tubercle bacillus.
    2. Diphtheria.
    3. B. tetani.
    4. B. typhosis.
- B. Anatomical or structural abnormalities.
  - a. Uterine displacement.
  - b. Subinvolution.
  - c. New growths:
    1. Benign.
    2. Malignant.
  - d. Foreign bodies.

(2) Constitutional factors:
- A. Anemia—
  - a. Chlorosis or pernicious.
- B. Endocrine disturbances.
- C. Debilitating diseases.
- D. Constipation.
- E. Circulatory or hepatic disease.

Trichamona is a genus of parasitic protozoa occurring in the form of a pear-shaped cell having three flazella anteriorly and an undulating membrane and a trailing flagellum.

The trichamona have several subdivisions:

1. T. Hominis found in the intestinal tract.
2. T. Buccolis found in the oral cavity.
3. T. Vaginalis found in the vaginal cavity.

While some (Hibbert, Hesseltine, Steine, Cope) doubt the fact that trichamona vaginalis causes the symptoms attributed to it, work has been brought forth to show that the organism is never found in women who are symptom free. Other bacteria are found associated with the trichamona and it has been claimed that these either cause the symptoms

*Read before the Raleigh County Medical Society at Beckley on November 21, 1935.

or directly contribute to the life of the trichamona.

Davis claims that the trichamona is an anaerobe—living only in the folds of the vagina. The ideal medis for the growth is the human serium. The physiological changes preceding and accompanying menstruation make an optimunm culture medium and the organisms greatly increase during this time.

Occurrence: Trichamona is the causative factor in leucorrhea in from 28 per cent (Hochne) to 69.9 per cent (Schmid and Kamneker) of the cases. Brumpt reported the trichamona found in 10 per cent of women examined regardless of complaint. In the routine examination of 600 pregnant women, 22 per cent were found to be infected. It is significant that postpartum morbidity occurs in 19 per cent of the cases where no trichamona is noted and antepartum examination and that in 50 per cent of the cases in which the trichamona is found antipartum, morbidity is noted after delivery. Barringer, contrary to current opinion, found that as high as 36 per cent of the trichamona cases were associated with Neisserian infection.

September and April seem to be the times when the infection is most noticeable.

There are several possible sources of infection:

1. Coitus: Urithritis and chronic prostatis has been found to be due to this organism. Kahn reported, however, about 19 per cent of his series of 47 cases occurred in virgins.

2. Fecal Contamination: It has been claimed that the organism found in the intestinal tract is a different organism, but this has not been definitely established. Strastney found, however, that the stool cultures were negative in infected cases which made him conclude that the infection did not come into the intestinal tract.

3. Urinary Tract: Karnaky has shown that examination of urine by a special technique revealed the trichamona in a large number of cases. Boric acid irrigation cleared the urinary infection.

Not only does the trichamona cause vaginitis, but at times a cystitis or urithritis in women. Manwell noticed a constriction at the meatus which was not a true structure. This he considered a rather typical urethral finding when trichamona is the causative agent in the urinary tract infections.

The symptoms are usually a profuse, foul, whitish, vaginal discharge associated with itching or irritation about the vulva. The discharge is persistent and does not respond to the usual vaginal therapy. It is also prone to recur even if treatment has been instituted. Trichamona is at times associated with gonorrhea (Bernstine.) The characteristic thick discharge of gonorrhea appears thinner and causes itching.

The physical findings in a vaginitis due to trichamona are usually characteristic. There is often some irritation about the vulva, frequently with signs of scratching. The vaginal discharge is marked, copious, milky white or yellowish, thin and foamy, or bubbling in appearance with a disagreeable odor. The vaginal mucosa at times contains small hemorrhagic spots, but is injected and reddened always. The cervix usually shows no involvement. In fact it is an important diagnostic feature to note that there is a profuse vaginal discharge with nothing in the cervix to account for it. Stastry found that any bleeding that might be coming from the genital tract —cervix or elsewhere, could be profitably corrected. The blood furnishes a favorable media for growth of trichamona and its presence delayed recovery.

The diagnosis is made on the history and physical findings, and confirmed by microscopic examination. When the speculum is inserted, it will be found to have scooped up some of the discharge in the vagina. This can be conveniently removed with a wire loop to a slide to which is added a drop or two of warm physiological salt solution and examined immediately under the microscope. The high power usually being employed, approximately three to ten trichamona may be found to the field. It must be remembered

that douching should be avoided for 24 to 48 hours before an examination is made, otherwise the organism may not be found. The trichamona is approximately the size of a leucocyte and is at times confused with it, but if carefully studied, the movement of the flagella and the pulsating movement of the mebrane wall, a differential diagnosis is made. This at first gives an appearance of a hazy, foggy area about the cell, as if the microscope had not been properly focused. Observation, however, will show that this is movement of the protozoa.

Various modifications have been suggested, varying slightly from this basic method of diagnosis. Six or eight drops of gentian violet with five c.c. of tap water are dropped on the slide with the secretion. The gentian violet stains the pus cells, but the trichamona do not take up the color until later, making an immediate examination easier.

Ewing and LeMoine advanced the method of a smear. A thin spread is made and air-dried (not flamed.) The slide is covered with carbol fuchsin, 20 to 25 drops of distilled water are then added and allowed to stand for three minutes. The slide is washed and dried. The fuchsin stains the flagella. This method gave a higher per cent of positives than did the hanging drop method.

Having established the diagnosis, treatment is instituted. The large number of different kinds of therapeutic measures that are used suggests the ineffectiveness of any one of them. The symptoms will subside, but recurrence is usually encountered.

Beginning with the simpler forms of treatment: Twenty-five per cent sodium chloride douches have been recommended by Rosenthall. The patient is instructed to measure out table salt using one glass of salt to three glasses of water, using this as a douche daily or twice a day. The symptoms are reported to be promptly alleviated and the infection to subside. The patient is to report at regular intervals for check-up and examination and the douches are to be continued for sometime after the discharge has subsided.

The theory presented for the effectiveness of the douche is by the principal of osmosis the protozoa are killed.

Merthiolate as suppositories or applied locally has been recommended. A possible explanation is offered that the symptoms subside because the secondary infection which is associated is cleared up, again raising the question of the relation between this accompanying bacterial growth and the trichamona and the symptoms.

Bellevue Hospital in the clinic is still relying chiefly on Lassar's Paste applied on tampons. Lassar Paste:

Sodium salicylate	gr. X
Starch	gr. XL
Zn. oxide ointment	gr. ZT.

The vagina is thoroughly cleansed by use of cotton pellets and is then distended with four or more Lassar's Paste tampons, which are left in 48 hours at which time the patient returns and the vagina is cleansed and the tampons replaced in similar manner, each time stretching and distending the mucosa. This is done for six weeks, stopping only for menses. It is important to start immediately after the flow stops because it is at this time when the growth is rapid due to the favorable presence of a rich blood serum media.

Thomas and McCarthy (J. A. M. A., Aug. 1934, p. 766) advocated the use of antogenous filtrate made from the streptococcus associated with the trichamona. The strep is isolated, grown, the culture is allowed to become sterile by its own antibodies. The filtrate is used with tampons applied as wet dressings to the vagina.

The "wet and dry" treatment has been widely used. The vagina is distended and irrigated with a sodium perborate solution (one ounce to two quarts of water) at 100 degrees Fahrenheit. Smith carries this out as a home treatment with a bulb syringe and perborate one-half dram to one-half cup of water with care being taken that the solution is fresh. This wet treatment is followed by the dry treatment. Seven and one-half grains of quinine sulphate are blown into the vagina

and over the vulva. Treatment is daily for one week, then every other day for two or more months. The problem of prolonged office treatment with its attendant expense and inconvenience, makes it necessary to advise home treatment.

The vaginal vault painted with a one-fourth strength Lugol's solution following a cleansing douche is effective at times.

Or Lugol's drams to two quarts may be used as a douche.

The picric acid suppository:

Picric acid	1.2 gr.
Boroglyceride	100. gr.
Zn. borate	.5 gr.
Sodium tetraborate	5. gr.
Hydrastrin (equivalent Tr. Hydrastic)	5. M.

Eucolyptus, sod. benzoate, etc., qs., inserted in the vagina at bed time and a hot douche in the morning with one per cent lactic acid. (About four percent of the patients get a dermitis from picric acid.)

During the acute stage, mercuric chloride (1:5000) has been found to be very effective. Contrary to the usual instructions the patient is told to take at least one douche daily, even while menstruating. This being especially important because it is during this time that an especially favorable media is provided for the trichamona and multiplication is rapid unless strenuously treated.

Various combinations of picric and lactic acid and Lugol have been used. Following routine cleansing of the parts, one per cent picric acid is swabbed in the vaginal vault, then dried. Kaolin is blown into the vagina and allowed to remain until bed time, when a douche containing Lugol's solution is taken. Doucheing is repeated in the morning, using a cooling, mildly astringent solution:

Menthol	1 dram
Camphor	1 dram
Pulv. alum	1 ounce
Boric acid	4 ounces

Peppermint water qs., 6 ounces, using one ounce to two quarts.

Ayers and Neil working on the finding that the trichamona grows best in an acid medium have given soda bicarbonate orally and used it as a vaginal paste to cervix and vagina to be followed by a douche in three or four hours, the treatment being given on alternate days.

A preparation sold under the trade name of Lab. Jel., which contains:

Mercury cyanide	1:3000
Boric acid	3%
Lactic acid	2%
Quinine hydrochloride	1%

The jelly should be injected morning and night.

The mere mention of the rest will suffice:

Stovorsal with sodium salicylate. Zinc oxide and starch or kaolin and sodium bicarbonate;

Picric acid, 1 per cent, with oxyquinidine, 1 per cent;

Tr. iodine;

Biniodide of mercury;

Green soap;

Devegan;

Phenol crystals (1 to 4 with boric acid) one ounce to the quart;

Carbarsane (Lilly) in 2 per cent suppositories;

Phenol mercury nitrate (1-10,000 as a douche);

Anoyodin, 4 per cent;

Metaphen 1:500, especially when associated with gonorrhea.

What ever therapeutic agents may be used it must be continued over a long period of time, constantly and carefully for at least a month or two after the symptoms have subsided.

It may be worth while to also investigate the husband to see if any old urithritis or prostatitis is present with the causative agent trichamona.

When are these patients cured? They are certainly not cured until after many careful examinations have proven negative. These examinations should be made after the menses

and repeated successively for several months at least.

What can I use in my practice as a result of this discussion?

First: Trichamona vaginalis vaginitis is the cause of a vaginal discharge which is persistent and irritating and resists the conventional types of treatment.

Second: The diagnosis is made by the help of the microscope and all cases should be followed and checked for progress.

Third: Treatment—None has been universally accepted as satisfactory. Two that are well worth remembering are:

Distension of vagina with sodium perborate (one ounce to a quart) followed by drying and blowing in of quinine sulphate (gr. 7.)

Twenty-five per cent sodium chloride is also apparently effective.

310 Professional Bldg.

BIBLIOGRAPHY

Andrews, C. J.: *Trichamona, Vaginalis, Vaginitis.* Virginia Medical Journal: 58-671: 1/32.

Ayer, Ew. and Meil, J. M.: *Trichamona Vaginalis.* Cal. and Western Medical Journal: 40-117: 2/34.

Bernstine, J. B.: *Gonorrheal Infection During Pregnancy Associated With Trichamonas Vaginalis.* Am. Journal Ob. and Gyn.: 5/34: p. 746.

Bland, P. B.: *Leucorrhea. Sig. and Trichamona.* South. Medical Journal: 17-23: 1/32.

Ewing, R. E. and M. Le Moire: Surg. G. and O. 58-192: 3/34. *Diag. of Vaginitis—Preliminary Report on New Method.*

Glassman, O.: J. A. M. A. 102—1748-50: 5-26-34, *Incidence and Trichamona in Pregnancy.*

Gospe, S. M.: *Treatment of Trichamona Vaginalis.* Cal. and Western Medical: 41-172-3: 9/34.

Hesseltine, H. C.: *Fallacies of Trichamona Vag.* Am. J. O. and G.: 26-46: 8/33.

Hibbert, G. F.: *Sy. of Strop. in Trichamona. Vaginalis. Vaginitis.* Am. Journal Ob. & Gyn.: 25-465: 4/33.

Janeway, M. M.: *Trichamona with Anayodin* (Chiniofin) *Clin. Report.* New York State Medical Journal: 35-528: 5-15-35.

Kahin, I. W.: *Treatment of Trichamona Vaginalis with Sodium Perborate and Quinine.* Am. J. Ob. & Gyn.: 10/34, p. 511.

Karnaky, K. J.: *Ural and Cutan Rw. Vaginitis.* 38-174-9: 3/34.

Karnaky, K. J.: *Trichamona, Vaginalis. Vaginitis.* Texas Medical Journal: 30-348: 9/34.

Manwell, E. J.: New England J. Medical.: 211. 567-9: 9-27-30.

Roenthall: *Trichamona Vaginalis, Vaginitis Treated with Twenty-five per Cent Saline Solution.* J. A. M. A. 7-13-35.

Ruble, W. K.: Northwestern Medical 33-14-16: 1/34. *Simplified Treatment* (with Mg So) (Suppositories) *and Explanation for Frequent Recurrence.*

Sayer, J. H.: *Vulvovaginitis Pruiritis. Trichamonalis.* Northwestern Medical. 30-278: 6/31.

Smith, W.: Wis. Medical Journal 33 102-4: 2/34. *Vaginitis, tr. with Sod. Perborate.*

Stostny, O.: *Trichamona Vaginalis.* Nebraska Stati. Medical Journal. 20: p. 105: 3/35.

Stein and Cope: Tr. Vag. (Donni). Am. Journal Ob. & Gyn. 25. 819: 6/33.

Tulisolo, D. W.: *Treatment of Trichamona Vaginalis.* Illinois Medical Journal: 67. 467-8: 5/35.

WITH DUE APPRECIATION

In past years the disposal of commercial technical exhibit spaces at our annual meeting has been a long and tedious process. More often than not, some of the spaces provided remained unsold. Even when all of the exhibit spaces were disposed of, it was invariably the result of long and unceasing efforts; of endless correspondence.

With the passing of time, the members of the Association have acquired a more active and enthusiastic interest in the Association and in its annual conventions. Individual members have taken it upon themselves to pass the word along that they would be looking for the representative of their favorite drug house or instrument manufacturer at the state meeting. The results are now apparent.

More than two weeks ago the Association disposed of its last commercial exhibit space for the Fairmont meeting. Unless there should be one or more cancellations, which is unlikely, no other distributing houses or manufacturers will be able to obtain space. For this healthy state of affairs, the Association may thank the individual members of the various component societies.

The sale of exhibit spaces is not, in itself, of paramount importance. What is important is the enthusiastic interest of the Association membership. The former is an excellent barometer of the latter.

THERMOMETERS AND HEALTH

No household should be without a "fever" thermometer. It is common knowledge that a person may be extremely sick without experiencing a rise in body temperature and that fever does not always mean serious sickness. There is, however, one thing that fever always means: the need for absolute rest in bed. Dr. Bernard Fantus writes on "The Three Household Thermometers" for the February *Hygeia.*

The thermometer second in importance is the room thermometer, by means of which room temperatures should be maintained between 68 and 70 F. Above this point the temperature becomes depressing, and sweating results, predisposing the individual to chilling, for wet garments rob the body of heat.

TREATMENT OF PELLEGRINI-STIEDA SYNDROME WITH REPORT OF TWO CASES

By E. BENNETTE HENSON, M. D.
Charleston, W. Va.

THE peculiar reaction of the medial collateral tibial ligament of the knee to trauma in which bone is formed in the ligament, has only recently elicited much interest. Not until Kulowski (April 1, 1933 in J. A. M. A.) reported his case, did American literature report this condition. Two cases are herein reported for the reason that in both cases a recurring injury brings them to the surgeon. The history of the two cases are almost identical, in one case a very unusual thing happened—a fracture of the ligament. At least this growth of bone was fractured (a better term for it does not come to mind). A radical resection of the ligament with electrocautery was the method of treatment.

Report of Case No. 1: P. C. (colored), age 48, automobile washer. Patient referred by his employer on January 22, 1935, with the following history: While washing an automobile the middle of June, 1934, standing on the rear bumper washing off top, the left foot slipped from bumper and left foot hit concrete floor causing inner side of knee to hit upright on the bumper. The knee swelled and was painful to walk on. For two weeks had to get boy to help wash cars. Pain and swelling gradually cleared up and he was able to return to work. As far as he could tell, the knee was the same as the other until January 21, 1935, while doing identically the same thing, left knee again slipped, striking bumper on inner side of knee. This time it is much more painful. On second day, had to stop work and presented himself for treatment.

Examination: Knee shows very little swelling. Medial condyle more prominent on left than right and on the slightest pressure excruciating pain is elicited. Impossible to outline the prominence on account of pain. Passive motion produces pain. X-ray of the region requested.

X-ray shows a typical Pellegrini-Stieda syndrome on the medial surface of the left knee in position of the medial collateral tibial ligament. There is a definite fracture line with separation of the distal end of this bone-like substance. (See Fig. 1.)

Operation on January 31, 1935 (11 days after second injury)—A curved incision was made over the mass over the medial condyle of the femur. A hardened mass was cut down upon and found to be embedded in the medial collateral tibial ligament. The distal third of the mass was movable, the upper two-thirds rather fixed. This confirmed previous diagnosis of fracture through this bone-like substance. A careful dissection was made in an effort to remove the fractured part without damage in order that a proper study could be made of the tissue. (See Fig. 2.)

No effort was made to shell the bony substance surrounding tissue since it appeared densely adherent. A dissection by knife around its exposed surfaces, then with dissecting scissors and small chisel its attachments from condyle were loosened. There was firm attachment to femur at one point. Then it was traced upward to end in the body of the ligament over one centimeter away from the ligamentous attachment to the femur. Only two bleeding points were encountered which required sutures. The entire area was then cauterized with electrocautery, paying particular attention to the proximal end and the point on femur to make sure that the attachments to the bone were thoroughly cauterized. This method of removal necessitated the sacrifice of greater portion of the ligament, but since the literature on the subject reports recurrences quite frequent, the ligament was sacrificed in an effort to lessen the chance of recurrence. The gap in the ligamentous structure was sutured loosely with interrupted No. 1 chromic catgut and the skin was sutured with silk. A plaster cast was then applied with leg in extension.

Postoperative Care: Patient kept in bed with plaster cast five days, then allowed up on crutches without weight-bearing, and at the end of two weeks the cast was bi-valved, sutures removed, wound found to be clean and cast was reapplied. No effort at manipulation was attempted at this time. At the end of six weeks cast was removed

and weight-bearing without cast was attempted. There was no evidence of any soreness or swelling at operative site. At the end of eight weeks patient was able to resume his former occupation of car washer. X-ray made at that time did not show any recurrence. This patient was observed from time to time. He had no complaints and the motion of the knee was normal.

Microscopical Examination as Reported by Dr. James P. Beck, Pathologist: P. C. No. 43729. Examination of: Medial side of left knee. Calcified ligament: A hard mass, 3 x 2 x 1 cms., which necessitated decalcification before sections could be cut. Several sections representing various parts of the bony mass are reviewed.

The tendon structure some distance away from the bony mass is not atypical, but as the fibers approach it they become swollen and slightly distorted. The tendon cells also become rounded and tend to lose their alignment between the heavy fibers. Spotty areas of recent calcification are found here. These fibers enter the bony mass much like those at tendon insertions. In other areas, particularly at the periphery, true Haversian systems are found arranged as in spongy bone. Connective tissue plugs bearing small blood vessels freely enter this part of the mass. Somewhat more centrally located are marrow spaces filled with adipose tissue. The lining of these spaces is a single layer of flat cells. No lacunae, indicating bone resorption, are seen. A few of the Haversian systems are uniformly pink staining, while others bear a narrow mid zone of blue staining substance. This indicates that the calcific material about the Haversian canal and at the periphery of the system is more recently deposited.

Bordering the spongy bone recently and partially calcified areas in which rounded and oval cells with abundant cytoplasm are irregularly distributed. These resemble cartilage cells in the fibrous stroma. It is possible for them to be swollen tendon cells, entrapped by the process of calcification. In the white fibrous connective tissue bordering the mass are small areas of scarring indicated by marked proliferation of fibroblasts. A few lymphocytes are present in these areas. The evidence here shown does not convincingly indicate that the retrograde tissue change in the contiguous tendon structures, or the scarring in the white fibrous tissue either preceded or following the production of spongy bone.

Diagnosis: Pellegrini-Stieda's Disease.

On February 5, 1936, over twenty months after injury and one year after operation, examination showed knee normal in every respect. No signs of any bone enlargement or painful points. The stability of the knee is equal to that of the opposite knee and x-ray of two views does not show any evidence whatever of any recurrence of original trouble. He continues daily at former occupation.

Report of Case No. 2: E. B., age 18, referred by Dr. C. C. Carson of Gassaway, West Virginia, came in on January 16, 1936 with the following history: On July 26, 1935, was hauling tree when tree turned over on entire left leg and tree and leg and all fell over a ten-foot rock pile. The horse pulling tree finally pulled tree off of leg. Entire thigh and knee were badly swollen and could not

FIG. 1.—X-ray showing calcification in the medial ligament with fracture of distal end.

walk for one week. X-ray at that time showed no pathology. On crutches about 48 days, then was able to walk without difficulty. On December 24, 1935, reinjured left knee by falling on ice. Inner side of left knee has been badly swollen ever since with knee flexed and was referred on account of continued swelling and deformity.

Examination: Left knee held in 80 degree flexion due to large non-fluctuating mass projecting on

medial side of knee displacing patella laterally. The skin over mass had bluish red, glistening, tense appearance. There was no motion of knee. Greenish discoloration of skin over the lower half of vastus internus was noted and beneath the skin almost board-like tissue was palpated, suggestive of myositis ossificans. No pain complained of and no painful points. No increase in temperature and no abnormal blood finding. A neoplasm following trauma was thought of. X-ray did not show any abnormal bone changes except the typical Pellegrini-Stieda syndrome which appeared apart from the tumor mass. Biopsy advised.

FIG. 2.—Showing photographs of different views of the ligament and bony substance after removal.

Incision was made over mass and large black clots removed in large quantities. No fluid of any sort encountered. The patella promptly slipped back into position and the motion of knee was again normal. The vastus internus muscle and sheath had been ruptured and was undergoing healing. Specimens for microscopical examination were taken. The tissue gave a grating sensation to the examining finger. The hard substance in the medial collateral tibial ligament was examined but not disturbed since it was felt further healing of adjacent tissue should take place. The tear in the muscle and fascia was partially sutured and the wound closed. After remaining in the hospital ten days with knee in extension splint, he was allowed to go home since the knee was rapidly assuming normal appearance.

The microscopical examination showed only round cell infiltration and no proliferation of osteoblasts.

On February 5, 1936, he writes asking to be allowed to walk. He is to return in six weeks for further study.

At operation this case seemed to present a very unusual picture. A myositis ossificans and a Pellegrini-Stieda syndrome, both of which probably had their beginning in July, 1935, and merely represent different stages of repair. The fact that a young athelete by merely falling on ice should receive such a violent and unusual injury to the structures of the knee without much discomfort afterwards warrants the belief that the tissues on the medial side of the knee were still in a state of repair from the injury six months previously and what the ultimate end result would have been had not the second injury occurred can be only conjecture.

Discussion: These two cases are presented because in each case a recurring trauma brings them to the surgeon. In the first case there was a definite refracture of the bone in the ligament. In the second case there was definitely two stages of bone regeneration. One has developed sufficiently to throw a shadow in the medial collateral tibial ligament while in the tissue anterior and above, the density is not sufficient to throw a shadow. In the first case the ligament was sacrificed in order to remove all cells which might regenerate new bone and it is of passing interest to note that the ligamentous attachment to the femur was entirely free of any abnormality. The sacrifice of the ligament (at least two-thirds) did not produce any instability of the knee from examination one year later and also no recurrence. Just what part the cauterization by electrocautery played is of course problematical.

The writer does not believe this condition will develop in injuries to the medial surface of the knee where immobilization is insisted on for several weeks immediately following the injury. About twenty references to this condition have been reviewed and the papers by N. Fram, Johannesburg, South Africa, citing the historical, and Kulowski of this country, giving the microscopical picture are especially helpful in this study.

CLEAN MILK AND HOW TO GET IT*

By D. B. LEPPER, M. D., C. P. H., S. A. P. H. A.
Bluefield, W. Va.

BRINGING to the front any story about sanitary milk production is a good-sized order and how to get a clean supply of milk for any community requires much work; more work than any one individual is able properly to assume. Team work becomes necessary for results and the team is made up of federal, state and community officials and the milk producers themselves. To these coöperative factors we must add the consuming public, who purchases milk on the basis of grade. We might state that the quality and quantity of milk used in any community, depends also upon the coöperation of the practitioner of medicine for he is so frequently depended upon as an adviser.

As you know, milk is our greatest food. It has been very well said, "you don't have to be a calf to enjoy milk." There is no substitute for milk in the human diet. Too little milk is consumed and more milk is needed by the child population, for no other single diet will bring that feeling of well-being and health to children.

There has been an endless discussion concerning the consumption of pasteurized versus raw milk, as to which is the better product. We will present the main reasons which seem to emphasize using pasteurized milk. It is very difficult, except by those with an extra supply of taste buds, to determine the difference in the taste from samples of the same milk, pasteurized and unpasteurized put before them. We are reminded of a time when this trial took place and as the story goes, a certain farmer was asked what he thought of the samples. He replied that the pasteurized milk was not his milk, whereupon an amount of cow dung was added and he at once stated, "That's mine and the right stuff." However, pasteurized milk, as you all may know, is milk that is heated to 145° F., and held at such temperature for thirty minutes and then rapidly cooled to 50° F. or less, and it does not change the quality of the product; if it is dirty raw, it is still dirty when pasteurized. The only accomplishment from pasteurizing is that of safety, as bacteria are not considered visible dirt. Pasteurizing does kill most of the common, injurious bacteria. The thermal death point of a germ is that temperature at which the germ dies, and the germs of the intestinal tract, as well as the common communicable diseases, are killed at pasteurizing temperatures.

It is necessary to have a good raw milk supply. Regulations and rules are plainly marked on the score card and constant violations of these rules places the particular plant involved in a low grade. Grades C and D are poor milks. There is no cooling, and bacteria counts are high. Grade D milk is allowed for two months and then the permit for selling milk is revoked. We made a big mistake when we began to enforce the Standard Milk Ordinance in 1927. We should have put all producers of milk in grades C and D, regardless of their ability to produce better milk. There were really no grade A producers at that time. We then could have elevated the worthy dairyman to higher grades as he complied with the regulations of the Standard Milk Ordinance. Instead of that we were lenient and went slowly along with the milk producers, giving them in the earlier years more credit than was due them. However, we have today twenty-eight dairies producing Grade A milk and have almost reached the accredited area, requiring a mark of ninety out of a hundred. We made eighty-

*Read before the Mercer County Medical Society at Bluefield on November 21, 1935.

eight. We have excellent prospects to reach ninety this year, which will entitle us to honorable mention by the U. S. P. H. S.

In regard to both human and bovine tuberculosis, most of these germs are killed at pasteurizing temperatures, but if a few are left unkilled, a protective measure in our ordinance is an additional safeguard; that is the tuberculin testing of all cows is done each year and when a reactor is found, as most every year some are found in a great number of cattle, these animals are disposed of. A further menace to public health that is becoming quite common in different parts is undulant fever and only last week in Wood county a case was reported. Bang's Disease (undulant fever) is closely allied to malta fever. This bacillus abortus is killed at pasteurizing temperatures, but also an additional safeguard by disposing of infected cows is in order. There are three ways of getting rid of this disease. First, by killing the animal; second, by isolation of the infected animal; and third, medical treatment, which is still only beginning and in an experimental stage.

The difference between Grades A and B should be well known. Grade B is the same as Grade A, except for two items. These items are temperature and bacterial count. Grade B milk is required to be cooled at 60° F. and to meet bacteriological requirements of 200,000 or less, while Grade A milk must be cooled to 50° F. or less, and be under 50,000 bacteria content per cc. Pasteurized, Grade B milk becomes Grade A milk, because of the big idea of the safeguarding against communicable disease, and because the milk meets the requirements as to temperature and bacteria content of Grade A milk.

Delivery of Milk: After milk is delivered, placards are placed in every store and cafe, showing the public the grade of milk sold. Labels are carried on all milk containers. The inspection of these depots is a very necessary procedure, that the milk shall remain cool and found in the original containers until served. It is a thing of the past when milk will be permitted to come into the city in jugs, stuffed with rags, cork or wooden stoppers. Dairymen are not held responsible after milk is delivered. A good housewife will not leave the milk long on the porch or door stoop to accumulate dust and flies or subject to the lapping of dogs and cats and hot weather.

Since 1927 we have been working under the Standard Milk Ordinance of the U. S. P. H. S. No better set-up has appeared that has been found so fair to all milk producers and control officers. One cannot help but admire the strength shown by this ordinance and a compliment is due the federal and state officials who have carried on against all kinds of political criticism and antagonism. Moreover, when it comes to grading, the state milk inspector follows in the wake of the local milk inspector, checks over his score cards, regulating the grades of the different milk producers and he in turn becomes responsible to the federal inspector. Thus the machinery and control of milk production becomes a certainty for a better milk, for a safe and clean milk supply can be had only by rigid control of the milk produced and the first essential is a workable ordinance.

Dairy Farm Inspection: If you will go with the milk inspector, you may study how milk production is carried on. If you have made earlier trips, you can see the contrast and the general appearance of an up-to-date dairy farm with that farm of 1927 and 1928 or before. You will see the inspector place a score card on the milk premises. All defects are recorded on these score sheets. For your information we are placing in your hands a copy of the U. S. P. H. S. Dairy Inspection Score Sheets. You will note how carefully the cow, the dairy barn, the milk houses, toilets, water supply, methods of production, bottling and capping, health of employees and vehicles are scrutinized and scored. There has been a great deal of money spent in the Bluefield area. One man alone has put $64,000.00 in a dairy plant.

No one should be in doubt about having a clean milk and a milk guarded against adul-

teration from water, or being skimmed, and unlawful preservatives, all of which the public has suffered from time to time. The ordinance calls for a butter-fat content of 3.25 per cent. Below this figure, is it a violation of the milk ordinance and it is assumed that the milk is being skimmed or adulterated and the offender is punished for cheating the public.

In conclusion, we wish to say something about our vital statistics and the importance of the milk program. What has it done? During the year 1926 our infant mortality was very high. We had fifty-one deaths of infants (resident) under one year of age. This infant mortality rate has been cut more than half. In 1927 there were thirty-five deaths; in 1928 there were thirty-four deaths; in 1929 there were 30; in 1930 and 1931, 24 deaths each; in 1932, 28 deaths; in 1933, 11 deaths, and in 1934, 24 deaths. Of course we cannot say that all this reduction was due to clean milk, but it is significant that these figures point strongly to clean milk as a principal agent in our lowered infant mortality rate. These are resident deaths only, not including children brought into hospitals from other places. These deaths were due principally to infantile diarrheas. As a contrast, the infant mortality from the coal fields and our nearby cities where they do not have adequate milk supervision and have not enforced the Standard Milk Ordinance, there are still more deaths than there should be via the milk route.

I might say that we hope the time is coming when the ordinance for clean milk will be enforced in the whole state, for we are firmly convinced that we will have more children living and a great many more in better health.

PURPURA FULMINANS

(Report of a Case)

By G. M. HARSHA, M. D.
Sistersville, W. Va.

HISTORY: Mrs. S. P., white female, aged 47. Married, five children living and well.

Family History: Essentially negative.

Past History: Surgical: Splenectomy in 1913, for some form of splenomegaly, the exact nature of which I have been unable to learn. In the past few years the patient has been intermittently complaining of recurring pain in the upper left quadrant. Medical: In 1932 and 1933 the patient complained of gas and fullness after eating. A gastric analysis in 1933 revealed a relative hypochlohydria, and indigestion largely abated with the administration of hydrochloric acid. The blood picture at this time was normal except for a slight secondary anemia which responded to iron therapy. Past history otherwise negative.

Present Illness: I was called to the home of the patient at 7:00 A. M., on the morning of February 28, 1935. Her complaint was severe pain in the region of both sacro-iliac joints, accentuated by movement and referred down the posterior aspect of the thighs. The onset of the pain was about five hours previously and was so severe that the patient had been unable to sleep. All symptoms were referable to the pain.

Physical Examination: At the time of my first examination on the morning of the above stated date, the findings were as follows: Well developed, somewhat overnourished white female, age 47, sitting in chair, apparently in excruciating pain, quite restless. Temperature, 99; pulse, 90; respirations, 20. Examination of eyes, ears, nose, mouth and throat negative. Chest clear throughout. Heart — rate, 90; B. P., 130/90. No en-

largement, regular in force rate and rhythm. Abdomen, negative. Back and extremities—slight tenderness over both sacro-iliac joints, and along the course of the sciatic nerves. Free passive motion, but active motion involving the lower spine was painful. Reflexes, full and active.

Course: A hypodermic injection of morphine sulphate gr. ¼, was given to the patient who was put to bed with the ordinary sickroom instructions, pending further investigation. The patient was comfortable throughout the day but at five o'clock P. M., I was called by a daughter who informed me that the patient had turned blue in the face. Upon visiting the patient (who lived some seven miles in the country) I found that the skin above the mandible was uniformly blue with hemorrhage into the skin, and that the body above the hips was mottled with petechial hemorrhages. Temperature, 102.5; pulse, 150; respirations, 30. Blood pressure would not register. The patient was entirely rational and was fairly comfortable. Within an hour she had begun to bleed from the uterus, and the pulse had reached 160 plus. Closely following this, hemorrhage appeared into the conjunctivae, the mucous membranes of the nose, mouth and throat. Death occurred at about 8:00 P. M., just three hours after the onset of the cutaneous hemorrhage, and 18 hours after the onset of the present illness.

Postmortem examination was not obtained.

Comment: In the majority of cases of purpura fulminans reported, the etiology has been infection, with the meningococcus, streptococcus, staphlococcus and colon bacillus the causative organism in frequency of the above order. The presence of an elevated temperature points in this case to an infective origin, but all the symptoms were referable to the hemorrhage—first the joint symptoms, and later to the hemorrhage into the skin and mucous membranes. Physical examination at the onset was entirely negative except for tenderness over the sacro-iliac joints and along the course of the sciatic nerves. Due to the remoteness of the residence of the patient and her condition which prohibited moving her, it was not possible to get pertinent laboratory reports.

Battley[1], reported a case due to the meningococcus, which at necropsy showed massive hemorrhage into the suprarenals. Adrenalin administered to my patient had absolutely no effect.

The etiology of this case is not established, which is to be regretted, but the case is of interest because of:

(1) The extensive cutaneous hemorrhage;
(2) Inordinately rapid fatal outcome;
(3) History of splenectomy in 1913.

REFERENCES

1. Battley, S.: *Purpura Fulminans Due to the Meningococcus; Case.* Am. J. Dis. Child., 1927, xxxiii, 244-248.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Teaching the Tuberculous Patient: By training, inclination and the tacit consent of the patient, the doctor is a dictator. Fortunately, the really sick person wants to be bossed—until he is convalescent, when he begins again to exercise his cantankerous democratic rights. But absolute dictatorship does not work in the treatment of tuberculosis. Here we are dealing with a long-drawn-out struggle, the outcome of which depends almost entirely upon what the patient is willing to do for himself. The patient's own conscience and understanding must guide his course in the innumerable petty and critical situations of daily life. He cannot be under the constant supervision of his doctor and one foolish act may undo the gains purchased by months of expensive care.

All this implies that the superintendent of the sanatorium should be, in effect, educator as well as doctor. Everyone of his assistants, nurses, orderlies and servants is a teacher under his supervision and shares with him the responsibility.

What should the tuberculous patient be taught? His curriculum might be divided into three main groups: (1) a way of life, (2) an understanding of tuberculosis, particularly his tuberculosis, and, (3) knowledge of how to protect others.

(1) The essence of the cure (for most cases at least) consists in learning a new way of life. While the tubercle bacillus is the sole, direct cause of the

disease, environment* (in its broad sense) tips the scale in favor of, or against, the infected person. Of the many people who are invaded by bacillus tuberculosis, only those few whose mode of life or environment or attitudes (again in a broad sense) violate nature's demands, are most likely to develop the disease. And if, after arrest of the disease has been achieved, the patient returns to his old ways and attitudes, he is, almost surely doomed to relapse. It is essential, therefore, to make a diagnosis of the patient's habits of living and thought pattern. Mental attitude perhaps comes first, for hope, cheerfulness and confidence are the patient's staunchest allies, and depression of spirits his cruelest enemy.

However, cheerfulness that is put on like a top coat or like a cosmetic will not outlast the grueling experience of the cure with its many ups and downs. No, unless well grounded in a sound philosophy of life, hope is likely to give way to deeper despair. Self-deception is not called for. Indeed for most patients the only tenable policy is to face frankly the fact that an unwelcome guest has established headquarters in his lungs and that for the rest of his life he must effect a truce with the invader, the terms of which call upon the patient to surrender cherished desires for bacterial peace.

(2) Long ago Dr. Lawrason Brown instituted his famous Question Box for patients at Trudeau Sanatorium. This was acknowledgment of the conviction that patients hav a right to know the answers to their personal questions. By skillful guidance and deft answers he managed in these group meetings to teach his patients what he believed they should know, in well-rounded form. Today every sanatorium follows that precedent in principle at least.

Understanding of the basic biological principles underlying tuberculosis is necessary if the patient is to be motivated in the right direction or to change his attitudes. Our job as teachers and trainers is to interpret the highly technical knowledge that we have, in terms which people of ordinary intelligence can grasp. The basic facts of tuberculosis are simple and a child can understand them, if the teacher is competent.

There is perhaps a basic alphabet which all patients should master. To catalogue here the several facts and concepts which the patient should learn, is not necessary, for these are contained in several books and treatises written for the patient. But we might profitably resurrect a few "pointers" given us by Dr. Brown in his original essay. For example:

Carefully explain to the patient the nature of a fresh tubercle and show him how exertion may undo its protective tendencies. Then the patient is persuaded to "elect" bed rest. Since his choice is of his own volition based on intelligence the act becomes his own and he may be depended upon not to break training.

Smatterings of knowledge are worse than none—take time to lay a sound foundation.

Do not discuss the patient's physical findings nor his complications with him, for that leads to introspection, but encourage objective study.

In teaching the patient to recognize symptoms let it be with the understanding that symptoms are to be regarded as red and green signal lights and not something to worry about.

The educational vehicles at the disposal of the sanatorium are abundant: the printed word, spoken word, the library, motion pictures and stereopticon slides. Surpassing all these methods is the personal contact of the doctor with the patient. He best knows the time and place for imparting this or that particular bit of information. By far the most potent educational force is actual practice. We learn to do by doing. To what extent can the practice of the sanatorium be carried back to the home, factory and shop? What is the use of achieving in the sanatorium a technical perfection which cannot later be duplicated in principle, in the home?

(3) The third broad grouping of the patient's training has to do with the prevention of the spread of his disease. Furnishing a patient with a sputum cup and installing an incinerator may be the alpha of prophylaxis but it is not the omega. He should learn of course why such scrupulous attention is paid to sputum disposal. But he should learn also the numerous ways in which tubercle bacilli migrate from one person to another. He should develop automatic habits of safety—something akin to the surgeon's "aseptic conscience." To learn by rote that kissing, spitting, the use of common eating utensils, etc., are "verboten," is well but not enough.

It is better to teach simply and clearly the general biology of the disease, the manner in which the germ gets from one person to another, and how it does its deadly work. Give the average person an understanding background and a few specific examples, and he will, himself, regulate his conduct to the best interests of others and his own good.

Address—Tuber. San. Conference of Metro, N. Y., Jan. 8, 1936, H. E. Kleinschmidt, M. D.

*Environment includes opportunities for massive infection.

PRESIDENT'S PAGE

"How beautiful it is for brothers to live together in harmony", so saith Holy Writ and the saying is true today as it was when these words were uttered.

It is fine for people of all walks of life to live in peace and amity. In our own profession it is not only right from an altruistic standpoint, but is profitable to our whole profession. When peace reigns within our midst, when a society is peaceful and not torn with strife and dissension, this society will flourish. The component members of the society will profit by the prestige that the whole society has built, but when dissension breaks out within our ranks the whole membership loses in prestige and we drive the people into the folds of the fakirs and charlatans.

There has never been a time within the history of the medical profession when we so sorely needed peace and a united front as at the present time. For over the whole profession there has been and is still hanging the shadow of state medicine. Compose the differences of the members within your component societies, let no internecine strife tear away the foundations of medicine which were so firmly laid by the fathers. The Lord Jesus said unto His disciples, "First cast the beam out of thine own eye, then shalt thou see more clearly to cast out the mote in thy brother's eye", so do not be too quick to criticize a brother. Perhaps you are both wrong. More likely the whole affair is a matter of misunderstanding.

Ordinarily it is not well for the medical profession to mix in politics. There are some exceptions, however, to this rule. Particularly as applied to members of school boards or of the State Senate or the Legislature.

There are many societies which have within their midst men who are well adapted to service in the state legislative bodies. It would be well to get out as many as possible. Support them in the primary, cross the ticket to vote for them in the general election, and if elected, take care of their practice while they are away and return this practice to them intact. They are looking after the interest of all, so this is the least we can do in return.

Charles G. Morgan

President

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CALIFORNIA RESOLUTES

The Council of the California Medical Association on January 19, 1936, unanimously adopted a resolution calling upon the Board of Trustees of the American Medical Association to take action to prevent Dr. Morris Fishbein "from capitalizing upon his position and using it for his personal financial profit." The resolution directs that the Board of Trustees require "its paid employee" to devote his entire time to the editorial duties of his office.

Regardless of any personal feelings we might have toward Dr. Fishbein, either favorable or unfavorable, we consider the California resolution a classic example of rocking the boat in the middle of a storm. It answers that age old question, "what's wrong with the medical profession." Here we are standing at the end of the pendulum swing toward socialized medicine and California takes the occasion to promote internecine warfare.

California points out that Dr. Fishbein has for some years been conducting a syndicated health column in the local press of the country and that in addition to his name is appended the title, "Editor of the Journal of the American Medical Association and Hygeia." Personally, we think it would be most unfortunate to omit the title. Without the title, Dr. Fishbein's thousands of readers would probably pay little attention to his advice on periodic health examinations, on the danger of patent medicines, on the wiles and pitfalls of quackery, and on many related subjects of extreme importance to the medical profession.

It is charged that Dr. Fishbein receives financial returns from his column "to his own personal profit and gain." So what! Does California resent the fact that Dr. Fishbein is paid for his column? We don't think so. Through his column Dr. Fishbein has acquired an international reputation. This was made possible through his connection with the American Medical Association. The only question involved is whether or not Dr. Fishbein is using his reputation and influence for the best interests of the medical profession. If he is, there is no cause for complaint. If he is not, then California should say so. The question of receiving pay for his health column is mere pettifogging.

If Dr. Fishbein should stop his health column, some one would immediately take his place. Every daily newspaper worthy of the name is going to carry a health column, whether it is written by Dr. Fishbein or by the assistant professor of neurocalometry at the Texarkana Chiropractic College. Dr. Fishbein is not engaged in the practice of medicine. He has no incentive to lure patients to his doorstep. It seems to us far better to sponsor and promote the health column of our own editor, than to quit and turn the field over to God knows who.

We feel that the action of the Council of the California Medical Association is unusually petulant. Even the wording of their resolution, which evades mentioning Dr. Fishbein's name, but speaks of him as "employed editor" and "paid employee", smacks of peevish animosity. It is our guess that all the arch enemies of the American Medical Association will swing with great glee upon the coat tails of the California resolution.

The resolution was signed by Dr. F. C. Warnshius, secretary of the California Medical Association. Dr. Warnshius was defeated for reelection as Speaker of the House of Delegates of the American Medical Association at the Atlantic City convention last June.

STATE INCOME TAX

Early in January, physicians throughout the state received green income tax forms from the office of the state tax commissioner for the purpose of reporting personal income for the year 1935. We wish to point out at once that the green forms are *NOT* intended for the reports of professional incomes and should *NOT* be used by physicians.

The income report form to be used by physicians is the *yellow* form for reporting business and professional incomes. This yellow form may be secured at any bank or from the clerk of the county court in any county. Exemptions on professional incomes may be claimed and allowed only if such incomes are reported on the yellow form.

Physicians may claim exemptions on office rent, upkeep on automobile used for professional purposes, drugs, salaries of assistants and nurses and all other items directly connected with professional income. This was explained in a bulletin sent to all county medical societies on January 17, 1935. It appeared at that time that some physicians did not know they were entitled to exemptions under the state income tax law.

May we point out once more that exemptions are allowed on the yellow form; not on the green form. Physicians who do not have ready access to their banking house or to the office of their county clerk, may secure yellow forms from the Association headquarters, Post Office Box 787, Charleston.

PAINLESS DENTISTRY

Some few weeks ago Dr. Leroy L. Hartman, professor of dentistry in the Columbia University School of Dental and Oral Surgery, announced the discovery of a new chemical formula to remove pain from the dentist's drill. Like his confreres in the healing art, both physicians and dentists, Dr. Hartman gave his discovery to the world without any strings attached.

Within 24 hours after his discovery was announced, the newspapers of America cried the news in banner headlines. Within a week the discovery was dramatized over the radio. Within a fortnight, articles concerning the discovery began appearing in the nation's periodicals. All of these reports emphasized one thing—the fact that Dr. Hartman *gave* his discovery to the world.

Time was when such discoveries as insulin and anesthesia and vaccines and the like could be given to the world without all this fuss and fanfare. No screaming headlines announced the gift of antitoxin and no radio hookup dramatized liver extract. The old milestones of medical progress were reached by science in quiet and proper dignity. Apparently those days are gone forever.

A new age seems to be upon us, the age of super publicity. In all probability, the super publicity given Dr. Hartman was just as embarrassing to him as it would have been to the earlier pioneers on the frontiers of medicine and dentistry. It now appears that future contributors to the healing art must pay the same price; the price of raucous and hysterical publicity. The American press is making it more and more difficult for the orderly advance of our national inventive genius.

ADVISORY COMMITTEE

At the request of Senator A. G. Matthews, Workmen's Compensation Commissioner of West Virginia, the Association Council on December 12, 1935, authorized the appointment of an advisory committee to the Compensation Department. The function of the new committee provided that it should act as a liaison group between the Compensation Department and the members of the Association.

Shortly after January first, the new committee was appointed by Dr. C. G. Morgan, incoming president. The committee is composed of Dr. B. H. Swint, chairman; Dr. John W. Moore and Dr. G. G. Irwin, all of Charleston.

The committee held its first meeting with Commissioner Matthews on January 27, at which time certain fundamentals were agreed upon to govern the future activities of the committee.

1—It was agreed that Commissioner Matthews would consult the committee on all matters of policy pertaining to the medical profession;

2—It was agreed that all licensed doctors in West Virginia should have the right of appeal to the committee in all cases of disputed claims;

3—It was agreed that the Compensation Department would abide by the decision of the committee in all disputed claims.

Until further notice, the committee will meet on the first Monday of each month. If it develops that the committee is unable to handle the accumulated work through the monthly meetings, more frequent meetings will be arranged.

We wish to point out that the Compensation Advisory Committee is now functioning and that disputed compensation claims may be appealed to the committee through the Association headquarters.

MEDICAL QUESTIONNAIRE

Many of our readers have received a communication from the American Foundation Studies in Government requesting an opinion relative to the adequacy of medical service as at present constituted and suggestions for betterment, should any change be deemed wise. These letters, we are informed, were sent only to physicians who have been in actual practice more than twenty years on the premise that two decades of acutal experience in dealing with problems of medical care probably better fit those so engaged to judge the needs of the social fabric in their special field of endeavor than any other group or segment of the population could possibly do. With this view we heartily agree in principle, although we would not have placed the age requirement more than half so high.

We do not know just what the activities or accomplishments of the American Foundation are, but certainly the list of names on the letterhead, which we suppose to be the "Governing Committee" referred to in the body of the letter, would lead one to believe that radicalism is at least not in the ascendency in the directorate of the organization. In sooth, we incline to the opinion that at least several of these would possibly be classed by the New Deal as "stand patters", and the remainder could be described as liberals rather than radicals.

In recent years the medical profession has been annoyed no little by "questionnaires" ranging from favorite cigarettes and breakfast foods to the greatest contributors to the advancement of medical science. Frankly most of these communications which have eluded the watchful eye of our faithful secretary have merely been glanced at and consigned unread to the realm of waste paper. Anyway we aimed them at the waste basket and hit it if we could, but both the office nurse and the building janitor have upon occasion upbraided us for the poor quality of our marksmanship. We are glad to say, however, that we took time to read carefully the letter from the American Foundation, and it impressed us as a sincere effort on the part of sincere people to a correct "estimation of the situation", if we may borrow a phrase from the parlance of the Army. The insinuation that possibly a much heralded recent survey of this subject generated "more heat than light" struck us as being peculiarly appropriate. In fact the general tenor of the entire letter seemed so forceful and earnest that we promptly referred it to the oracle of our profession, the headquarters of the American Medical Association, and their reply assured us that as far as could be ascertained, the proverbial Senegambian in the woodpile was conspicuous by his absence.

Seriously and in all earnestness, we wish to urge upon those of our readers who received this communication to reply in detail. The answer should be carefully considered

and should present the viewpoint and mature conclusions of the individual respondent. Surely we have not spent two score years in the forefront of the battle without learning proper tactics. If we are called upon to consider ourselves as constituting a figurative witenagemote of the profession, we should certainly speak our minds clearly and distinctly upon the subject which is so vitally important to each of us as individuals, to our profession as a whole, and above all to the American people who look to us for guidance in health and relief in disease. Again we say, *REPLY*.

W. E. V.

PHYSICAL REHABILITATION

An interesting experiment in the physical rehabilitation of unemployable relief clients has just been completed and the results tabulated by the West Virginia Relief Administration, under the direction of Mr. Charles W. Ritter. A total of 92 physically handicapped men, all of them heads of families, were rehabilitated and placed in gainful employment at a cost of $11,702.95; an average of $127.20 per case.

It is estimated by the Relief Administration that the average cost of direct relief per family is $230.13 per year. Therefore, for 92 average families the cost would be $21,172.04 per year. This is $9,467.09 more than the total cost of rehabilitation. The 92 men who received physical rehabilitation are now back in commercial employment and their families are removed from the relief rolls. Hence the state will save $9,467.09 on these 92 families the first year, and, at least in theory, $21,172.04 each succeeding year.

The saving experienced by the state on these 92 cases would rehabilitate 74 additional heads of families. Stated another way, 166 heads of families could be rehabilitated for what it would cost to maintain 92 families on direct relief for one year. It is estimated, based upon actual physical examinations of all persons on direct relief, that there are 6,000 heads of families who could be removed from the relief rolls through physical rehabilitation.

Unfortunately the rehabilitation project of the Relief Administration was stopped early in December and funds are no longer set aside for that purpose. All available funds of the Relief Administration are now being paid out to direct relief clients. There are approximately 32,000 persons in West Virginia now on direct relief. It would appear from the above figures that the Relief Administration could effect a material saving by continuing physical rehabilitation.

It has been recommended that the West Virginia legislature set aside $16,000 per month of the $250,000 monthly relief appropriation with which to carry on the physical rehabilitation program. This sum would provide physical rehabilitation for approximately 1500 persons each year, at a total cost of $192,000 per year. The first year's saving would be well over $100,000 and the saving would be over $300,000 for each year following.

If the sum of $192,000 is set aside for physical rehabilitation it will mean a loss of only 50 cents per month to the 32,000 families now on direct relief.

ATTENTION SECRETARIES

The JOURNAL wishes to suggest to all county society secretaries that we will be glad to publish advance notices of coming meetings. Such notices should be sent in with the regular reports of meetings already held.

A number of component societies plan their programs well in advance and many of them occasionally bring in nationally prominent physicians and surgeons who are leaders in their respective fields. Doctors from adjoining and nearby counties would no doubt be interested in attending such meetings if they knew about them in advance.

A number of doctors have requested the JOURNAL to publish advance notices of unusual or outstanding county meetings for the reason above mentioned. So we say, again, that we would be pleased to receive such advance notices from the various component county society secretaries.

COUNTY SOCIETY NEWS

BARBOUR-RANDOLPH-TUCKER

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held at the court house in Philippi on the evening of February 20 with a good attendance. Dr. J. L. Miller, president, presided.

Following the business session, the scientific program was taken up. The guest speaker was Dr. George F. Evans of Clarksburg who gave a highly interesting paper on the subject, "Treatment of Pulmonary Tuberculosis," which brought forth a liberal discussion.

RUSSELL S. WOLFE, *Secretary*.

CABELL COUNTY

The scientific program of the February 13 meeting of the Cabell County Medical Society consisted of a series of case reports presented by Dr. W. F. Beckner, Dr. H. D. Hatfield and Dr. I. I. Hirschman. Mrs. W. A. Mudge of Huntington also gave a short talk on "The Nursing Service of the Red Cross." The meeting was held at the Pritchard Hotel, Huntington.

The case report by Dr. Beckner was on "Sinus Thrombosis"; by Dr. Hatfield on "Adamantoma", and by Dr. Hirschman on "Cardiospasm." This made up a most interesting program and there was a good attendance.

CHAUNCEY B. WRIGHT, *Secretary*.

CENTRAL WEST VIRGINIA

Three outstanding scientific papers and a fine attendance featured the February 27 meeting of the Central West Virginia Medical Society which was held in the Rotary Club rooms at Sutton. The scientific program was preceded by a dinner for the members and visitors in attendance.

The program was opened by Dr. S. D. Edelman, associate professor of pediatrics at the School of Medicine, Ohio State University, with a paper on "Preventative and Curative Measures in Diseases of Children."

The next essayist was Dr. Frank W. Harrah, Columbus, chief of the Urological Service at White Cross Hospital, with a paper on "Transurethral Resections of Vesical Neck Obstructions."

The scientific program was concluded by Dr. William B. Morrison, Columbus, with a paper on "The Diagnosis and Treatment of Carcinoma of the Stomach." Dr. Morrison is on the surgical staffs of Grant, White Cross and Mt. Carmel hospitals at Columbus and is the son of Dr. M. T. Morrison of Sutton.

Doctors were present from Charleston, Weston, Clarksburg and other points and took part in the liberal discussions which followed the presentation of the above papers.

EUGENE S. BROWN, *Secretary*.

HARRISON COUNTY

The Harrison County Medical Society held its regular monthly meeting on February 5, and was preceded by a six o'clock dinner at the Stonewall Jackson Hotel, Clarksburg. During the business session, Dr. William H. Allman of Clarksburg was accepted as a new member of the society.

The guest speaker was Dr. C. C. Coleman, Richmond, Virginia, who spoke on "Some General Observations on Diagnosis and Treatment of Brain Tumors." Dr. Coleman, who is professor of neurosurgery at the Medical College of Virginia, presented a number of lantern slides and gave a very interesting and instructive paper.

CREED C. GREER, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of February 11 with an excellent attendance. Essayists of the evening were Dr. M. L. Bonar and Dr. R. O. Halloran, both of Charleston.

Dr. Bonar opened the scientific program with a paper on "Eczemas of External Origin", the discussion being opened by Dr. R. H. Dunn. Dr. Halloran's paper was on "Eczemas of Internal Origin," with Dr. Harry E. Baldock opening the discussion.

During the business session which followed the society adopted an amendment to its by-laws requiring a six months' probationary period for new doctors applying for membership. The society voted down an amendment to increase the annual dues and voted down a second amendment which sought to clarify the by-laws relating to list practice.

P. A. HALEY, II, *Secretary*.

LOGAN COUNTY

The regular monthly meeting of the Logan County Medical Society was held at the Logan General Hospital on the evening of January 15

with a good attendance. The guest essayists of the evening were Dr. Walter E. Vest and Dr. W. C. Kappes, both of Huntington.

Dr. Vest opened the scientific program with a paper on "The Digestive Mass of Renal Pathology." Dr. Kappes presented his paper on the subject, "Some Phases of Endocrinology." Following these two interesting addresses and discussions, a buffet lunch was served to the members and visitors in attendance.

The February meeting of the Logan County Medical Society was held at the Logan Memorial Hospital on the evening of February 12. The essayists were Dr. Edwin Matthews, Logan, whose subject was "Doctor, My Kidneys Bother Me," and Dr. A. K. Kessler of Huntington, who gave a very interesting talk of his experience in the practice of medicine. His subject was "The Past, Present and Future Practice of Medicine."

DANA T. MOORE, *Secretary*.

MARION COUNTY

Dr. J. B. Clinton of Fairmont was elected president of the Marion County Medical Society at the meeting held on December 31 in the Fairmont Hotel. He succeeds Dr. George Traugh, who served during 1935. Other officers elected were Dr. C. L. Parks, vice president; Dr. A. H. Stevens, reelected secretary, and Dr. C. W. Waddell, reelected treasurer.

Dr. George Traugh, Dr. Joe Yost and Dr. G. R. Miller were elected ot serve on the Board of Censors. Dr. C. T. Francis and Dr. J. L. Blanton were elected convention delegates, with Dr. L. R. Lambert and Dr. W. A. Welton as alternates.

Mr. Frank Haymond, Fairmont attorney, was the guest speaker at the January 28 meeting of the society. His subject was "The Medicolegal Aspects of Operations on Minors." He discussed the aspects of contracts in treating the unconscious or minors. He mentioned that liability may be incurred whether treatment is gratuitous or for fee and the ancient law of the medicolegal status of the wife regarding her husband's consent. He stated that consent could be implied from conduct and attitude and that in emergencies efforts should be made to consult and use all reasonable means to obtain consent.

Committees appointed at the January 28 meeting included: Auxiliary Advisory Committee—Dr. K. Y. Swisher and Dr. L. R. Lambers. Central Council for Civic Agencies—Dr. W. A. Welton and Dr. C. T. Francis. Medical Economics—Dr. F. B. Rogers, Dr. C. L. Holland and Dr. P. F. Prioleau. Dr. Clinton was elected to represent the society on the Hospital board.

A. H. STEVENS, *Secretary*.

MONONGALIA COUNTY

Dr. E. J. Van Liere, acting dean of the School of Medicine, West Virginia University, and Dr. F. R. Whittlesey of Morgantown were the essayists at the February 4 meeting of the Monongalia County Medical Society. The meeting was held at the Hotel Morgan Green Room and was preceded by a dinner at six o'clock.

Dr. Van Liere's subject was "The Effect of Low Oxygen Tension on the Movements of the Stomach." Dr. Whittlesey spoke on "Low Oxygen Tension in Disease." Both papers were highly interesting and instructive.

G. R. MAXWELL, *Secretary*.

OHIO COUNTY

Dr. William Rienhoff of Johns Hopkins Hospital, Baltimore, was the guest speaker at the January 31 meeting of the Ohio County Medical Society which was held at the Ohio Valley General Hospital. His subject was "The Surgical Treatment of Diseases of the Bronchi and Lungs." Dr. Rienhoff described at some detail, 16 cases on which total pneumonectomies had been performed and discussed the results which were obtained, both good and bad, in one group of cases.

Dr. Rienhoff's paper was discussed by Drs. George Vieweg, C. H. Clovis, Russell B. Bailey, D. A. MacGregor and W. M. Sheppe. There were 44 members and guests in attendance.

Dr. J. A. Kolmer of the Postgraduate School of the University of Pennsylvania, Philadelphia, was the guest essayist at the February 7 meeting of the society, his subject being "Infection, Immunity and Vaccination in Infantile Paralysis." He traced in some detail the development of the concepts leading to the preparation of the vaccine which is now being experimentally used. He pointed out the similarity of this and rabies vaccine. Dr. Kolmer discussed the technical methods of manufacture, accidents which have happened during its administration and safeguards which have been erected to prevent these accidents. He presented a statistical analysis of the administration of the vaccine to date for the prevention of poliomyelitis.

Discussants of Dr. Kolmer's paper were Drs. J. T. Thornton, Russell Bond, James McClung, R.

J. Reed, Jr., C. A. Wingerter, Andrew Wilson, W. M. Sheppe, D. A. MacGregor, W. T. McClure, and E. S. Bickle. There were 63 members and guests in attendance.

Dr. Walter Simpson of the Miami Valley Hospital, Dayton, Ohio, was the guest speaker at the February 21 meeting of the Ohio County Medical Society. His subject was "Advances in Artificial Fever Therapy." Discussion was opened by Dr. W. P. Sammons and Dr. M. B. Williams.

W. M. SHEPPE, *Secretary.*

PARKERSBURG ACADEMY

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at the Chancellor Hotel, Parkersburg, on the evening of February 6, with 35 members and a considerable number of visitors in attendance. The meeting was preceded by a dinner for the doctors and visitors present.

During the business session the Academy voted unanimously to reimburse Dr. W. R. Goff for expenses incurred in securing an injunction against E. L. Nedeef for practicing medicine without a state license. The Academy also voted unanimously to confer honorary membership on Dr. C. W. Rexroad of Harrisville and to request the state association to concur.

The scientific essayist of the evening was Dr. John A. Kolmer, Philadelphia, who gave a most fascinating and illuminating address on anterior poliomyelitis entitled, "Infection, Immunity and Vaccination in Infantile Paralysis." The outstanding portion of the address dealt with his work on vaccination against the disease with an attenuated virus.

BERLIN B. NICHOLSON, *Secretary.*

WYOMING COUNTY

Dr. F. H. Penn of Coval was elected president of the Wyoming County Medical Society at the regular meeting held in Mullens on the evening of February 6. He succeeds Dr. J. O. Bailiff who served during 1935.

Other officers elected at the February 6 meeting were Dr. T. R. Coleman, East Gulf, vice president, and Dr. Ward Wylie, Mullens, reelected secretary-treasurer. Dr. J. F. Biggart, Dr. J. O. Bailiff and Dr. B. W. Steele were elected to the Board of Censors.

Following the election of officers and the disposal of other business, a banquet was served to the members present.

WARD WYLIE, *Secretary.*

GENERAL NEWS

THE FAIRMONT PROGRAM

The Association Committee on Scientific Work, headed by Dr. Ivan Fawcett of Wheeling, has announced the completion of the general program for the Fairmont meeting next June 8, 9 and 10, 1936. Most of the sectional programs have also been completed by the section officers.

Among the prominent out-of-state essayists who will appear on the Fairmont program will be Dr. Lawrence Royster of the University of Virginia, Dr. Frank Lahey of Boston, Dr. Arthur M. Fishberg of New York City, Dr. George Livermore of Memphis, Tennessee, Dr. Warren T. Vaughan of Richmond, and Dr. George Alvin Ulrich of Philadelphia.

West Virginia doctors who have been given program assignments include Dr. Claude Smith, Charleston; Dr. M. H. Porterfield, Martinsburg; Dr. R. H. Wharton, Parkersburg, and Dr. Howard T. Phillips, Wheeling.

The Oration on Medicine will be delivered by Dr. F. C. Hodges, Huntington, and the Oration on Surgery will be delivered by Dr. R. B. Bailey, Wheeling.

All the sectional meetings will be held at the Fairmont Hotel. The Section on Surgery and the Section on Pediatrics will meet on Monday morning, June 8, and the Section on Internal Medicine and the Eye, Ear, Nose and Throat Section will meet on Monday afternoon of the same day. The general convention sessions will open on Tuesday morning, June 9, and close with the annual convention banquet and dance on Wednesday evening, June 10.

Dr. Charles L. Scudder of Boston has been secured for the meeting of the West Virginia Society of Industrial Physicians and Surgeons which will convene at the Fairmont Hotel on Thursday morning, June 11, following the close of the convention program. The West Virginia Society of Obstetricians will also meet at the Fairmont Hotel on Thursday morning with Dr. George Alvin Ulrich of Philadelphia as the principal speaker.

Plans for the unveiling and dedication of the Founders' Monument at Rivesville are progressing

nicely and a history of the Association founders is nearing completion by the Woman's Auxiliary.

All of the local convention committees of the Marion County Medical Society have been appointed and are ready to function. Most of the preliminary convention details have already been arranged. Dr. Amos H. Stevens, secretary of the Marion society, is chairman of the General Convention Committee. The monument dedication ceremony will be in charge of Dr. C. O. Henry, Fairmont, and Dr. T. M. Hood, Clarksburg.

AMERICAN COLLEGE OF SURGEONS

The 1936 sectional meeting of the American College of Surgeons will be held in Louisville, Kentucky, on Thursday, Friday and Saturday, March 19, 20 and 21, with headquarters at the Brown Hotel. The participating states include West Virginia, Kentucky, Illinois, Indiana, Ohio, Virginia, Tennessee and Missouri.

Registration will open on the morning of March 19, followed by operative clinics and hospital conferences during the morning. The annual meeting and dinner for Fellows will be held that evening, after which there will be scientific sessions on general surgery, and eye, ear, nose and throat, together with a hospital round table conference.

Operative clinics will be held on the morning of March 20, together with hospital conferences during the morning and afternoon. Sessions on general surgery and eye, ear, nose and throat will be held during the afternoon and a community health meeting is scheduled for that evening.

A cancer clinic, fracture clinic and operative clinics for eye, ear, nose and throat surgery will take up the morning of March 21. Sessions on general surgery, and eye, ear, nose and throat surgery will be held during the afternoon and the meeting will close at 5:30 o'clock. Medical motion pictures will be shown each day form 12 until 2 o'clock.

Among the prominent speakers who will appear on the program will be Dr. George Crile, Cleveland; Dr. A. W. Adson, Rochester; Dr. Frank E. Adair, New York; Dr. Charles L. Scudder, Boston; Dr. Frederic W. Bancroft, New York; Dr. Francis L. Lederer, Chicago; Dr. Michael L. Mason, Chicago, and Dr. Frederic A. Besley, Waukegan, Illinois.

All members of the medical profession in the states above mentioned have been cordially invited to attend the sectional meeting.

DARK FIELD TEST

A new service that will aid in safeguarding the health of the public while facilitating treatment for the patient has just been inaugurated at the State Hygienic Laboratory. It is the dark field test used in the diagnosis of syphilis in its early stages. This is the method of early diagnosis used with most success in the venereal disease clinics in the United States.

The present methods now used generally in West Virginia by health officers and physicians are the Kahn and Wassermann blood tests. These methods frequently do not show the presence of syphilis until the disease is well advanced, making treatment more difficult and of longer duration. By the dark field method, syphilis can be diagnosed in from three days to three weeks after infection.

In a study more under the auspices of the American Public Health Association it was found that during the first few days of infection, ninety-six per cent of the cases showing a negative Kahn or Wassermann reaction were positive by dark field examination. As the disease developed into the second and last stages the positive cases found by the dark field method declined while the negative cases found by the Kahn or Wassermann tests changed to positive cases.

Not only is syphilis easier to treat when it is in its primary stages, but it also presents a greater danger to public health at this time because it is much more contagious then than at any other stage. Possibility of infection from foodhandlers or from public drinking fountains and public toilets is high at this stage and hence diagnosis and treatment is most important.

Comparison of the number of cases of syphilis in the United States with other communicable diseases shows the great necessity for finding and treating syphilis in its early stages. In 1934 there were 518,000 cases of syphilis reported as compared with the 131,000 cases of tuberculosis, 43,156 cases of diphtheria and 22,217 cases of typhoid fever. This comparison is based on the reports of twenty-six states.

Dark field outfits for obtaining specimens to be sent to the laboratory for examination have been sent to the health officers in the fifty-five counties in the state. The State Hygienic Laboratory will furnish these outfits free of charge to any private physician desiring them, whose work includes the treatment of venereal diseases.

THE WEST VIRGINIA MEDICAL JOURNAL

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII APRIL, 1936 No. 4

HEALTH PROMOTION BY EDUCATION*

By Iago Galdston, M. D.
Executive Secretary, Medical Information Bureau, New York Academy of Medicine
New York City

In the Hippocratic oath, the neophyte of our profession swears by Apollo to give no deadly drug, not to commit abortion, to keep inviolate the professional secrets, and not to seduce any member of the household where he is called on to visit the sick. He also swears to esteem his teacher as a parent and to pay to him and to his full honor.

Now, it is well known that men need neither be sworn to refrain from doing what they abhor, nor need they be bound by oath to do that which they would perform gladly.

The lumping together in the oath of Hippocrates of injunctions against poisoning, abortion, and moral turpitude, with the promise to honor one's teacher, bears witness therefore, at least to this, that even the ancients knew that men do not gladly nor freely honor their teachers.

Indeed, mankind pays little more than lip service to its teachers and then mainly when they are dead. It is twenty-three hundred and thirty-four years since the greatest of men and the most sublime of teachers was served the hemlock cup. It is nineteen hundred and two years since He who preached the sermon on the Mount was crucified for His pains.

The lesser lights alike among its teachers, mankind has dimmed or blotted out by persecution and indifferent neglect. To this attest the trying and tragic experiences of Peter Abelard, Roger Bacon, Copernicus, Servetus, Galileo, Spinoza, and Urial d'Acosta, to name but a few. How contrary is this "lesson of history" to that common vision of the bashful, eager-eyed boy who comes to class toting the first fruit of instruction—an apple for teacher. But the crux of the matter rests in the interpretation of the meaning of teacher. In the Anglo-Saxon root, taecean, it is one who trains; in the Latin root, ducere, it is one who leads. The teacher who indoctrinates us in those accepted and well established knowledges which serve our everyday needs, it is true, has our gratitude,

*Read before the West Virginia Health Conference, Huntington, October 28, 1935.

and sometimes even our love. But the educator who would serve as our guide, as our leader, who would have us transvalue our values, substituting vision for blind conjecture, and a closer approximation to the truth for the more distant one, him we serve the hemlock cup, him we crucify and mock, him we burn at the stake and banish as an enemy to mankind.

Whosoever therefore presumes to teach, to educate, must be aware of the risk, and must assume the hazard. With this knowledge, let us, you and me who are interested in education, in health education, venture afield.

'Twere simple in the title assigned to entertain you a while with pleasant words on health education as it is conducted today. A short-sighted survey, one that reaches neither far back, nor far forward, which does not weigh performance against opportunity, nor service against needs, could easily afford one not only satisfaction but even pride in our performances. But such surveys are made by those politically minded, or by fools. The true teacher looks with a keener and more critical eye, and what he beholds saddens his heart, and moves him to raise his voice like the prophet Jeremiah. For he sees little teaching and that little badly done. He beholds indifference, lack of understanding and incompetence. True, here and there an oasis dots the wasteful wilderness, but that only sharpens his anguish at the sight of the far-reaching desert.

And the fault is greater as it is witnessed among doctors.

The term doctor is derived from the Latin docere, meaning to teach. Doctor signifies a learned man, one trained and qualified to lead men, that is, to teach them. In the early days of medicine, when the medicine man ceased being a mystic, and a fraud, he was a priest and a teacher. He compounded ritual with sanitation and hygiene, the latter derived from experience and intensive observation. The Mosaic laws and the writings of the Hippocratic schools are excellent illustrations of this type of priestly teaching. Ingrained in these teachings were the basic appreciations of the self-righting powers of the human body, and of the vis medicatrix naturae, the curative forces of nature which fend for man in illness.

The physician exercised his arts through these agents resident in the patient, both for the maintenance of his health and for his recovery from disease. For this reason so much consideration was given to diet, gymnastics, and personal hygiene.

To Hippocrates is credited the following enunciation: "Now so much at least it is indispensable that the physician should know concerning Nature and should greatly concern himself to know, if he is to do any part of his duty; to-wit, what a man is (i. e., what his constitution is), relative to meat and drink, and what he is relative to the rest of his mode of life, and what results follow for the individual from particular things, and all this not merely in general terms, as e. g., 'cheese is unwholesome food, for it distresses one who eats plentifully of it', but what particular distress it causes, and for what reason, and to what ingredient of the man's constitution it is unsuitable."[1]

The knowledge so gained was to be taught to the patient for his benefit, and to others who sought instruction.

Among the ancient Greeks "schools of medicine" meant not alone cliques of medical men sharing, in competition with other cliques, certain antagonistic tenets: a school was indeed a teaching institution where laymen could learn what the teachers taught.

And indeed without a knowledge of bacteriology, without an understanding of infection and the modes of its spread, what else was there for the ancient physicians to do but to observe, and on the hypothesis of causality-association to formulate and to preach and teach such guiding rules of personal conduct in relation to weather and season, work and leisure, food, clothing, shelter, human association, etc., as experience proved were of prophylactic worth. Also, there is more than a suspicion that finding themselves

impotent when confronted by malignant illnesses, the ancient physicians wisely concerted on the avoidance of disease, and on the evasion of those complications which experience taught them ever stalk in the shadow of milder illnesses.[2]

The foregoing is true of a large segment of ancient medicine, but most so of the Golden Era, from the rise of the Hippocratic school in the fifth century B. C., to 335 A. D., when the first Christian emperor Constantine closed the Aesclepeia. Save among the Arabs, medicine made little progress during the subsequent eight hundred years. The priests who became healers were little concerned with sanitation or with personal hygiene, and all health teaching in Europe sank to the lowest level since the days of prehistoric barbarism.

But with the eleventh century the horizon brightened. The unfortunate Abelard confounding the authorities with contradictory citations from the Fathers in his famous essay entitled "Sic et Non", made a plea for the human reason as a team mate of faith. Roger Bacon in the shadow of the stake and the rack, speculated upon and experimented with the forces of nature. Boccacio learned Greek and lectured upon "The Divine Comedy" of Dante, the last of the great medievalists. Rabelais issued the first Latin translation of the aphorisms of Hippocrates. Constantine, at Monte Cassino, Gerard of Cremona and Mark of Toledo, were busy translating into Latin the ancient classics of Greece preserved in Arabic.

The human spirit quickened again and in time there was the Renaissance. Man turned his eyes from the beyond earth to the here-now. The inductive philosopher, Francis Bacon, formulated the creed of the modern world, and died teaching us how to refrigerate and to preserve perishable foods.

From this time on the star of modern science rises high in the heavens. Medicine gains with the other branches of learning. Anatomy, physiology, and gross pathology are advanced remarkably. There is a crystallization of thought and understanding in relation to nosology, diagnosis and epidemiology. Valuable clinical and diagnostic instruments and procedures are developed. Auenbruger teaches us percussion, Laennec teaches us auscultation, and in the background there ripens slowly the fruitful play-work of Leeuwenhoek and his animalcules.

Then the sun of attainment bursts upon us in the work of Pasteur and Koch. The science of bacteriology is established. In unparalleled quick succession the causes of numerous diseases are revealed, and in many instances also the means for their control or elimination.

Communal preventive medicine becomes the most potent sanitary power, overshadowing by far the single attainments of the physician. Smallpox, cholera, typhoid, bubonic plague, malaria, yellow fever, yield before the sanitarian and the engineer. The ancient plagues are undone, deaths are reduced, the life span is lengthened, morbidity declines.

Imperceptibly, or since all eyes were on the marvelous developments of modern medicine, none was free to perceive it, we drifted far from Hippocratic medicine. In our science there was a signal shift of emphasis from man proper to his environment, and particularly to its inimical elements.

Unlike his ancient forerunner, the doctor of this late day is not as much concerned in enlisting the aid of the vis medicatrix naturae, as he is concerned with the antitoxic quality of his serum, the comparative sterility of the community's drinking water, the presence of adequate amounts of iodine in the diet, or the potency of his vaccines. In his armamentarium the physician of today possesses so great a list of weapons that the art and science of medicine seem to be reduced to merely recognizing specifically the pathologic condition and selecting from the host available the precisely fitting remedy.

Under these conditions there appears to be little need for instruction, save that perhaps which goes on the label of the pill box or medicine bottle. The doctor now is no longer a doctor—he is a dispenser of medicaments;

not a teacher but a doer of things, and the things with which doctors may do things in these days have multiplied marvelously.

Nor is the doctor unique in this. Our public health officials, too, concert mainly on fighting disease by such specifics as smallpox vaccination, diphtheria immunization, typhoid inoculation, etc.

True, the teaching of health is not entirely a lost art. Thus the commercial organizations who have something to sell that is good for you, that gives you pep, makes you beautiful and keeps you young are among the forerunners of our so-called health teachers; then come the quacks, and the patent medicine vendors; the public schools give some instruction in hygiene and sanitation, and some private, voluntary health organizations manage to impart some instruction on health conservation and health promotion. I lump these together without comment on the quality of instruction offered, its dependability, etc. For the present I am merely concerned with him who does the teaching.

In sketching the rôle of the doctor as an educator, we find him a true teacher in the great days of antiquity, a priest or medievalist in the middle ages, and a scientist more concerned with disease than with the patient in the late days of our history.

There is neither distortion nor perversity in this summary. Nor is one age or period set off to the disadvantage of any other. I have indulged in this quick historical survey in the hope that we might thereby better appreciate our problems of today and find warrant therein for a revival of the Hippocratic spirit.

For the problems of yesterday were those of the great epidemic diseases, and we solved these problems in a large measure by communal sanitation, by vaccines, and sera. The problems of today, however, are of another sort. They center around the so-called degenerative diseases, the chronic disorders and those of the nervous system and of the psyche. These problems will not be and cannot be solved by communal sanitation, by vaccines or sera. Furthermore, unlike our ancient progenitors who were content to live, to live no matter how, just so they lived, we of today are impatient with illness. We want not only to live, but also to be healthy, and to be attractive, robust and energetic. It is because of these wishes, too, that we fall such easy victims to the nostrum vendor, the seller of short cuts to their attainment. We must be concerned, therefore, not only with a new set of mortality causes, but also with the even larger problem of morbidity.

In this concern we must reshift our emphasis from man's environment and its inimical elements, to man himself, to his habits, to his practices, to his personal hygiene. The gifts of communal hygiene are not to be abandoned or rejected. No, to them we are to add what a revived Hippocratic dedication to the individual may reward us with.

The implication is clear. We must become teachers again, to teach man how to live. We must practice personal preventive medicine. This *must* is written large upon the future; whosoever has eyes and sight can see it. Whosoever sees it, has an eye to the future and will prove good for the morrow; he will not be discarded. The others must suffer the common fate of those whom time and advance have outraced.

This is true for the private practitioner. It is true for the health officer. The order of the day is personal preventive medicine; the main means, health education.

The greatest single advance in the last decade has been witnessed in the realm of nutrition. To defects in diet, and in the digestive and absorptive mechanisms have been traced such widely varying conditions as beriberi, pellagra, scurvy, rickets, pernicious anemia, night blindness, xerophthalmia. To these, too, are charged dental decay, increased susceptibility to infection, especially in the respiratory tract, lower fertility, serious and irreparable damage to the nervous system, and in infants, arrest in the development of the central nervous system. The Mellanbys of England have been able to reduce the incidence of puerperal infection in an experi-

mental group of parturient women by the simple, and be it noted, very inexpensive expedient of adding cod-liver oil to their diet.[3] In truth we have far from fathomed the far-reaching effects of defective nutrition, or of the prophylactic benefits of good nutrition.

I cite the subject of nutrition as an illustration of the inescapable need to develop adequate health education, for surely if we are to benefit by our knowledge it will need to be spread wide, and in such fashion as will make it an integral part of the thought and behavior of our people.

An equally pertinent and significant illustration can be found in the problem of mental hygiene. Here, too, the solution cannot be expected to come in any other form but that of education. In this realm for certain, vaccines, sera, and what we call communal hygiene and sanitation have no rôle to play.

But more, in that we have come to realize of late, what Jellife[4] tried to make us realize years ago, and what Alexander and Alvarez have demonstrated incontrovertibly, namely, that neither functional nor organic disease is without its psychologic component, we find further warrant for our contention that education, education for health, is and will prove to be one of the most powerful and effective means for improving and maintaining individual health.

Indeed the most astute students of etiology assign to bad mental hygiene a primary rôle in the engendering of functional diseases and in laying down the basis for later organic disease.

But even in dealing with those diseases which we today believe to be entirely due to some exogenous agent, health education still has a cardinal service to perform. In rheumatic fever and in diabetes, for example, there is need to teach the sufferer how to live with his disability, how to maintain, in one case the efficiency of the damaged heart, and in the other how to utilize the metabolic crutch of insulin and dietetics. The effectiveness of most specific therapeutic and prophylactic agents and procedures could be appreciably enhanced by means of health education.

I have piled argument on argument to show the need for health education, and its inevitable mounting importance. I have even played the rôle of prophet, issuing dire warnings to those who will not see the future spelled clear in the events of today. Now it is no less incumbent upon me to define what I mean by health education, for otherwise we may by default lose the most significant part of our consideration. I have in mind when speaking of health education, something radically different in substance and in psychologic approach to most activities now carried on under the designation of health education. Perhaps the best way in which I can tersely make clear the difference between what *is* and what I would see in health education, is by sketching the history and psychology of our current activities and contrasting them with what we may hope for on the morrow.

The history of the health education movement in America is rooted in prohibition, not alcoholic prohibition alone, but in prohibition in general.[5] Health education began and to this day largely remains an education of taboos. The earliest educators were missionaries who set out to teach us the evils of drinking, of smoking, of wearing tight-laced corsets and high heels, and of moral lapses. When preaching did not effect the results desired, these missionaries turned to science, substituting as they no doubt believed the incontrovertible evidence of anatomic and physiologic experience for the unsupported word of the preacher. The cirrhotic liver of the habitual drunkard, the sallow, emasculated, stunted appearance of the cigarette smoker, the hour glass liver of the slim-waisted woman, the horrifying pictures and wax models of the "for men only" exhibits are still within the memory of some among us. These were the early instruments of health education, and their psychologic bias was that of negation and fear. The injunction "don't" greeted us on every side. It was in-

deed, as all primitive education is, one of taboos.

Time and experience enlarged the scope of the educational endeavors and refined the technique, but the psychologic bias remained unaltered. To the mere preachment of the evils of drink were added elementary instruction on the anatomy and physiology of digestion, and of such other phases of body structure and operation as had pertinent bearing on the taboo which the teachers were eager to promulgate.

Lest, however, I be misunderstood as disparaging, if not condemning these pioneer health educators, let me hasten to affirm the contrary. Standing on the shoulders of one's forerunners, one can always see further than they did. In fact, not only do I not condemn them, nor mock their shortcomings, but more, I can sympathetically see how any of us placed as they were would perforce do no better, if indeed as well. For the situation is such that the evil was patent but the remedy hidden. And since it is not in the nature of man to stand by and idly witness evil without action, until that action is in certain remedy, they, (those early pioneers), struck out blindly, taking the first likely means at their command. The means proved futile and ineffective, and yet it is for us to honor those men, for their intent was good.

On the other hand, we must not emulate them in their errors, nor perpetuate their faults, for we have come upon a wealth of knowledge which we may spread, and we have gained insight which it is incumbent upon us to follow. We must abandon the technique of *taboo* and cultivate that of *affirmation.*

I have often said that the only group that appears to understand and to employ the technique of affirmation is that of the commercial advertisers. Recently my conviction was strengthened by a full-page advertisement which reads as follows: "If you want to sell 'em something make 'em laugh, make 'em cry, thrill 'em, and talk to 'em of love." Beneath these captions there ran these true words:

"Laughter has always held the crowds."
"Stronger even than laughter is pathos."
"The world never tires of excitement."
"And the greatest moving force of all—romance and love."[6]

Dwelling on the wisdom of these words there came to my mind the leaflet I found in one cosmopolitan department of health, a leaflet sent to mothers with the birth certificate of their children. The first line in this leaflet read: "Four out of every ten bottle babies die before their first birthday." Perhaps this leaflet was designed to "make 'em cry". If so, it is the wrong kind of crying, for these would be the tears of fear, not of sympathy. Such tears are shed in anxiety, not as a luxury, in the full knowledge that in all melodramas, virtue triumphs through all trials, and the hero wins in the end, no matter against what odds.

I thought, in contrast of another department of health, where a health officer endowed with a native insight into the planes of human emotion sent a note of personal congratulation with every birth certificate, and other cheerful memoranda, the later ones dealing with weaning, smallpox, diphtheria, etc., every month thereafter. Nor did he ever make the fatal error of sending a note of advice concerning the child to the mother whose baby had died.

Too much of our health education has been trifling in significance, inconsequential and unconvincing, negative, preachy, and full of taboos. "A clean tooth never decays", "Do not drink water with your meals", "drink eight glasses of water daily", "sleep with your windows open", "take exercise daily", "do not spit", "be examined on your birthday". These are preachments mainly. When pressed hard the preacher finds it difficult to justify his sermons, or to prove the worth of his precepts. At best we have urged that which is not very significant, nor always important. These preachments came into being when

there was a paucity of knowledge and we have "kept 'em up."

Today we know more. Let us change our tune and our words. We know the value of prenatal care to mother and to unborn child. There is a good starting point. We know the worth of competent medical supervision of the gestating woman, how such care helps avoid the accidents of pregnancy and of parturition. We know the value of an adequate diet to mother and fetus, the need for sufficient intake of vitamins and salts. Here is positive knowledge which we can teach affirmatively, not in the fear of illness and death, but rather in the native vanity of the woman, her wish to be well and safe, and her well wishing for that being she is carrying.

And when the child is born, how much there is to be taught on the care of the infant, from regularity in feeding to the protection of the youngster against infection from sick visitors, and against rickets. Despite much controversy in the field, there is a body of positive knowledge on the mental and emotional development of the infant and of the preschool child, which it is proper for health educators to spread. Health education, too, must come to the aid of the city departments and of the private practitioner, in effecting the vaccination of the young against smallpox, their immunization against diphtheria, etc. For experience has taught us that laws do not always effect their ends, and that persuasion and enlightenment must serve to render our laws acceptable to the population.

At all stages of the child's development until the time it attains adulthood there are lessons to be taught and positive knowledge to be imparted. For it is patent we are not in Arcadia, and to live with any degree of comfort and effectiveness we require much knowledge of the human body and its ways.

Not alone, however, the substance matter but our techniques of education, too, must be modified. The subjects concerned with health preservation are the easiest to teach, provided we know how. Man has an acutely alert curiosity; let us teach by arousing his curiosity. Sympathy is the mediator between mortals which renders intelligible human discourse—let us enlist sympathy. Man has the ever present need to maintain some form of logical scheme of the world he lives in. Let us fit the knowledge we wish to impart into that logical scheme. And, since our ultimate objective is to affect behavior, immediate or remote, let us operate through the mainspring of human motives.

It is not enough that facts are as we say they are. They may be totally irrelevant, or if they are so thought to be they will so be, for all effective purposes. It is not enough that the facts are important, for ever there is the question, important to whom—and there are many who neither know the facts nor of them. It is not enough that our exposition of the important facts is logical and sound. We must speak so as to be understood and so that what we say will fit into the framework of our listeners' logic and scheme of things. We owe a debt to our audiences' understanding no less than to logic proper. To attain effectiveness, we must hitch the wagon of our intent to the star of human emotions, and ride to attainment on one or more of the inherent motivations of men, superficially touched on in the advertisement mentioned above, and skillfully as well as learnedly elaborated by the psychologist, McDougall.[7]

In our educational technique then we must arouse curiosity, enlist sympathy, impart information, and lead to action.

We must also be considerate of our audience, of its stance. The primary grade pupils have a unique attitude toward authority, and a singular curiosity. Both are unlike those found in the upper grade or high school students. There is a fittingness, therefore, to be sought in the native, inherent character, bias, curiosity, interest, understanding, of the group addressed and the substance matter, and specific technique of our educational efforts. This fittingness we must strive to attain.

What I have said holds true for the entire range of health education, whether conducted

by the private practitioner in his office, by the clinic doctor, by the public health nurse, or by the teacher. To be effective the knowledge we impart should be affirmative, aiding to live better and longer. Our technique of instruction should be founded on modern psychology which reveals to us the mainsprings of human behavior. We must adapt substance and technique to our audiences, changing them according to requirement.

I will close by projecting before you my vision when in the near future health education has come into its own.

I see a gathering in which I recognize the commissioner of health and all the heads of his departments, a representative of the official medical organization, a representative of the official dental society, a representative of the public health nursing organization, a representative of the school system, a representative of the local voluntary health organizations, and a representative of the welfare organizations.

The meeting is called to order. The first item of business is a report on the vital statistics of the community. This report includes not only births, deaths, marriages, infant mortality, maternal mortality, contagious diseases, and other standard items, but also morbidity data, gathered from hospital and clinic admissions and from key groups of physicians. The gross trend of the vital statistics of the community and the seasonal to-be-anticipated diseases and their complications are also dealt with.

The report rendered, discussion is opened on what is to be done. Consideration is given to the direct service needs of the ill. When these have been adequately scrutinized and dealt with, then the important part of the meeting is brought up — prevention — and with that the contributions of health education. Private practitioner, department of health bureau head, school man, nurse, and community representatives each reviews his or her special phase of the problem, each defines his and her part of the contribution to be made. At the end there is a concerted, though differentiated plan of action, and a plan of education, based on the patent needs of the community, on the positive knowledge of the problems and of the means whereby they are to be met, on the techniques and special motives to be employed with the various groups to be dealt with. The entire body of proposed health education will also have been scrutinized and approved of by one who knows the substance, art, and particularly the psychology of education.

But then perhaps you think my vision is too large for the small town, the village or the county. But I say to you—no. If there be not available those many department heads, and those various other representatives, the meeting may still be held. The health officer can confer with himself, can listen to his reports, and can ask and answer his questions.

What we need is vision, for is it not said, where there is no vision the people perish.

But where there is vision, there will issue a superior health education. The people will not perish but thrive, and in thriving will bless and reward those who served them soundly and wisely.[8]

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REFERENCES

1. Taylor, Henry Osborn: *Greek Biology and Medicine.* Boston: Marshal Jones Co., 1922, p. 17.

2. *The Works of Hippocrates.* Introduction by W. H. S. Jones, Litt. D. Loeb Edition, Vol. IV, p. LI.

"It is pleasant to turn to the general purpose of the work (Regimen II-IX), which is a justification and exposition of prodiagnosis, 'the nipping of a disease in the bud'."

"The author, in fact, was the father of preventive medicine."

3. Mellanby, Edward: *Nutrition and Disease.* Edinburgh and London: Oliver & Boyd, 1934, pp. 81-88.

4. Vide as examples: Smith Ely Jelliffe—

Psychopathology and Organic Disease. Archives of Neurology and Psychiatry, 8, 639, 1932.

Paleopsychology: A Tentative Sketch of the Origin of Symbolic Function. Psychoanalytic Review, 10, 121, 1923.

Unconscious Dynamics and Human Behavior. A Glimpse at Some Interrelationships of Structure and Function. In Problems of Personality. Studies presented to Morton Prince. Harcourt, Brace & Co., New York, 1925, pp. 331-350.

5. Coles, L. B.: *Philosophy of Health: Natural Principles of Health and Cure.* Ticknor, Reed and Fields; Boston, 1852.

Johnson, Edward: *Life, Health and Disease.* John Wiley: New York, 1850.

6. New York Times, Oct. 1, 1935.

7. McDougall, William: *Outline of Psychology.* New York: Charles Scribner's Sons, 1923.

8. Galdston, Iago: *The Practice of Preventive Medicine by the Private Practitioner.* The Health Examiner, Dec. 1933.

ACUTE APPENDICITIS—EXPERIMENTAL INVESTIGATIONS

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ACUTE appendicitis in its various forms has a high mortality rate. *The Health Examiner* published by the New York Academy of Medicine, March, 1935, in its report made from eleven outstanding hospitals in New York City, places the mortality at seven per cent. Extreme care was exercised to see that the acute cases and only the acute cases were listed. Other reports, carefully made of acute cases, place the mortality from four to eight per cent.

We are not concerned in this paper with the etiology of chronic appendicitis, nor with the "waves of appendicitis" which have been reported in upper respiratory and other infections. The similarity between the flora of the inflamed appendix and the bacterial flora of the oral cavity suggests the idea that the infection is carried by way of the blood stream. No doubt, acute appendicitis occasionally occurs in this manner.

Our investigation with reference to the etiology of acute appendicitis in animals was done with the idea that infection of the appendix takes places in the majority of cases from the direction of the intestine and only when certain conditions are met.

Dogs and rabbits were the animals used for this purpose. It is questionable whether the dog has a true appendix; at any rate, it is a cecal appendage with thin walls and a lumen much larger than that of man. It contains a small amount of liquid fecal matter and gas, but at no time have we observed fecal concretions. When the appendix is filled with considerable fecal material or foreign bodies of sufficient size, it usually empties itself through its vigorous peristaltic movements. In one instance a large cork was jammed into the lumen, and an exploratory operation done twelve days later revealed a normal appendix without the cork.

Many types of bacteria normally inhabit the lower intestinal tract of man and animals. Among these may be mentioned organisms of the coli group and the Welch bacillus, a sporulating, anærobic organism which is one of the most common causes of gas gangrene. Under normal conditions it is not pathogenic, but under abnormal conditions, it may assume disease producing properties. Mechanical intestinal obstruction and peritonitis offer a favorable condition for its growth and toxin production. With this in mind alterations of the lumen and blood supply of the appendices of dogs were made in an attempt to find out if acute experimental appendicitis could be produced.

Group 1: The base was occluded by ligature, the appendix was split wide open opposite the mesentery attachment, thus permitting the contents to soil the surrounding structures. The blood supply was not disturbed. Three dogs were used and all made uneventful recoveries. Exploratory operations done several days later showed the presence of a firm mass of fibrous tissue about the appendix. The normal contents of the appendix did not cause any serious damage when the peritoneum was soiled.

Group 2: The lumen of the appendix was occluded at the base by a silk ligature, after intestinal contents from the ileum and cecum had been squeezed into the lumen. Only a small amount of intestinal contents could be pushed into the appendix. The blood supply was not disturbed. Eight dogs were used and all recovered. Several were explored later on and the appendices showed nothing more than congestion and retention of mucus. Occlusion of the lumen with a small amount of fecal material in the appendix caused no acute symptoms.

Group 3: The existing fecal material was imprisoned in the appendix by ligating the base. The blood vessels were included in the ligature, thus cutting off the entire circulation to the appendix. In most instances there was but little fecal material

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present. Ten dogs were used. Nine died within thirty-six hours of a gangrenous, perforated appendix with peritonitis. The tenth died fourteen days after operation. In this case, at the time of operation, we injected 10 cc. (formaldehyde) two per cent into the lumen in addition to the above procedure. The introduction of formaldehyde evidently greatly reduced or destroyed the toxins and germs, or made the tissues more resistant to absorption of the toxins or invasion of the organisms. Formalehyde was also used in the rabbit experiments reported later in this paper.

Group 4: Large amounts of fecal material, usually in the form of fecal concretions, were inserted into the lumen and imprisoned by occluding the base. The blood supply was left intact. The increased intra-appendiceal pressure caused vigorous peristalsis. As the lumen had been ligated at the base, it was impossible for the appendix to empty itself. Marked swelling and edema occurred near the constriction at the base. This caused obliteration of the blood supply to the appendix by pressure and death occurred within thirty-six hours.

The sudden occlusion of the blood supply, together with the imprisoned appendiceal contents, apparently produced a very virulent toxin which caused acute gangrenous appendicitis and peritonitis, with death occurring in a short time. When large amounts of fecal material were imprisoned and the lumen occluded, even though the blood supply was not disturbed, death occurred apparently from the same cause.

It was our impression that mechanical alterations of the appendix, as described above, produced conditions favorable for the growth of the organisms, especially the anærobes and their accompanying toxins.

In the next procedure, which was done on rabbits, an effort was made to determine which germs are capable of producing appendicitis, and what alterations to the appendix are necessary before infection takes place. The rabbit is much more satisfactory than the dog. Its appendix is chiefly a lymphoid organ and its wall and bacterial flora are similar to that of man. It is known that the rabbit is subject to spontaneous appendicitis. A small amount of feces is normally present and occasionally fecal concretions are found.

Eichhoff and Pfannenstiel[1], in a careful examination of acute, chronic and normal human appendices found that in each group, the chief organisms were coli bacilli, enterococci and Welch gas bacilli. Many other organisms were found, but since the three mentioned above predominated, little importance was given to the others. In the acutely inflamed human appendices they found that the three types of germs showed quantitative and qualitative differences from those in the normal cases. In the acute cases more generous quantities of Welch gas bacilli were present and they were present in about 75 per cent of their acute cases. There was a predominance of coli varieties which induced high grade fermentation of lactose; the enterococci made a close approach to the hemolytic streptococci. They never found hemolytic streptococci in the acutely inflamed human appendices.

It appears, therefore, that germs in the normal human appendix lead a saprophytic existence until some change occurs in the tissues of the appendix, possibly of a mechanical or anatomical nature, thereby making a culture medium favorable for the growth of the already existing germs. It was our purpose, then, to see which organisms are capable of producing acute appendicitis experimentally, and which prerequisities are necessary to enable the organisms to become virulent. From our observations on the dog experiments we came to the conclusion that germs within the appendix do not become active and produce disease until the tissues are altered by mechanical and anatomical means.

Rabbits were used in the following experiments:

Group 1: Into the lumen of the rabbits' appendices were placed pure cultures of coli bacilli, enterococci and pneumococci taken from acute human appendices and other inflammatory processes. They were suspended in normal salt solution and introduced either singly or in combination. The rabbits showed no ill effects from these germs.

The experiment was repeated in other rabbits, only this time the appendix was stenosed near the base by a ligature. The rabbits showed no ill effects and several days later autopsies were done. In a

few, the appendix simulated acute appendicitis in man; in most instances, however, the portion distal to the ligature showed nothing but distention, congestion and retained mucus. It would appear, therefore, that the above organisms have no etiological importance in acute experimental appendicitis in rabbits.

Group 2: In the stenosed appendix of several rabbits a pure culture of Welch gas bacilli was introduced, causing a moderate distention. The rabbits succumbed within a few hours (within 18) of acute gangrenous appendicitis with diffuse fibropurulent peritonitis or pure gas peritonitis. When a pure culture of Welch bacilli was injected into the non-stenosed appendix of the rabbit nothing happened. In order to test again the action of formaldehyde as we did in the dogs with occlusion of the lumen and blood supply, a two per cent solution was introduced into the stenosed rabbit's appendix to which gas bacilli was then added. The rabbits did not die and ten days after the operation appeared well. In both dogs and rabbits, not treated with formaldehyde, death occurred within thirty-six hours.

According to Eichhoff and Pfannenstiel[1], hemolytic streptococci, taken from inflammatory processes other than appendicitis, when injected into the stenosed appendix of the rabbit, always produced a high grade infection and quite often death. We were unable to verify their findings in the few experiments that we did.

Heile[3], and other investigators, are of the opinion that undigested food rests and ferments imprisoned in the lumen of the dog's appendix, are more important in producing disease symptoms than the presence of certain bacteria. Normally the small intestine digests and absorbs 98 per cent of the albumin and protein and about 93 per cent of the fats. In overfeeding and diarrhea, he claims, 20 per cent or more of food may pass into the large bowel undigested. If retention of undigested food rests occurs in the appendix, the toxins from the albumin and fatty acids, are responsible for changes which quite often lead to appendicitis.

To study the effects of imprisoned food rests in the presence of digestive enzymes on the appendix, two rabbits were used. The appendix was ligated at the base. The blood supply was left intact. The appendix was then moderately distended with a concentrated solution of egg albumin (about 25 per cent solution) plus a small amount of olive oil, starch, pancreatin and 0.25 per cent of sodium carbonate. Fourteen days later the rabbits were killed. At autopsy the appendix of one was firmly bound down with dense adhesions. When freed of adhesions, the appendix was found to be about the size of a small hen egg. When it was opened it was found to be full of creamy white pus which had a foul odor. The mucous membrane was denuded and the wall of the appendix was markedly inflamed and thickened. Examination of the pus showed only the presence of coli bacilli. The appendix of the other rabbit was very much increased in diameter and when opened, contained a small quantity of mucopurulent fluid. The mucous membrane was partially denuded and the wall was inflamed and thickened. The appendiceal abscess simulated the appendiceal abscess found in man.

In those cases, possibly the incompletely digested food rests, especially proteoses, peptones, peptides and fatty acids acted upon the mucous membrane to devitalize it permitting the saprophytic organisms normally present in the intestinal tract to invade and attack the underlying tissues, or these food rests afforded a media which permitted the organisms to become pathogenic and then they attacked the underlying damaged tissues.

Tsuda and Shimizu[2], having been impressed with the frequency of Welch bacilli in the human appendix and peritoneal exudate, especially in grave forms of appendicitis, prepared an antivirus from Welch bacilli found in acute human appendicitis. In guinea pigs the antivirus was injected under the skin of the thigh and ten days later a weak dose of gas bacillus virus was injected under the skin of the abdomen. The guinea pigs with the antivirus showed but slight inflammatory reaction, whereas the test animals without the antivirus presented marked alterations of

tissues, characteristic of Welch bacilli. They recommend the antivirus, because of its curative effect on animals, for the treatment of grave appendicitis in man.

We are all familiar with the grave condition which occasionally accompanies acute appendicitis. The symptoms of the acute peritonitis are quite similar to those seen in primary acute intestinal obstruction. Gas gangrene antitoxin has been of value in the treatment of acute intestinal obstruction. The Welch bacilli and other anærobes are usually found in the acutely inflamed human appendix. Of the organisms used in the above experiments it was the only one which invariably caused death within a short time in dogs and rabbits.

With these observations in mind we prepared twelve rabbits by injecting pure cultures of Welch bacilli into the stenosed appendix.

Of the twelve animals thus prepared, seven received gas-gangrene antitoxin (combined).

The five rabbits that did not receive the antitoxin died within twenty-four hours of acute appendicitis and peritonitis.

The seven rabbits that received the antitoxin all lived with the exception of one which died from within thirty-six to forty-eight hours.

Conclusion: (1) In the stenosed appendix of the dog with obliterated blood supply, death from acute gangrenous appendicitis and peritonitis occurred within thirty-six hours.

(2) In the stenosed appendix with intact blood supply, large fecal concretions produced swelling and edema which ultimately led to occlusion of the blood supply of the appendix and death within a few hours of acute gangrenous appendicitis and peritonitis.

(3) Appendiceal contents must be imprisoned before acute appendicitis can be produced experimentally.

(4) Enterococci and coli bacilli taken from acute human appendices were not capable of causing severe acute appendicitis in rabbits—even in the presence of stenosis. The rôle of hemolytic streptococci was not determined for lack of sufficient material.

(5) Food rests, capable of further digestion, when imprisoned in the rabbit's appendix, appear to make it possible for the development of appendicitis.

(6) Welch gas bacilli, taken from acute human appendicitis and other inflammatory processes when injected into the stenosed appendix of the rabbit invariably caused death within a few hours. Gas-gangrene antitoxin (combined) is of definite value in combating gas gangrene infection of the appendix and peritoneum in rabbits.

Summary: Occlusion of the lumen, alterations in the circulation of the appendix, foreign bodies such as fecal concretions or food rests, either singly or combined, are factors which make it possible for the normal saprophytic organisms to become pathogenic.

In view of the beneficial results of gas-gangrene antitoxin in rabbits it is recommended in all grave cases of human appendicitis.

REFERENCES:

1. Eichhoff, E. and Pfannenstiel, W.: *Experimental Investigations Concerning the Etiology of Appendicitis.* Burns' Beitr. z. klin. Chir., Berl. & Vienna, 1931, cli, 171-202.
2. Tsuda, S. and Shimizu, M.: *The Presence of Welch-Fraenkel Bacilli in Appendicitis and the Curative Effect of Specific Antivirus.* Compt. rend. Soc. de biol., 1932, cx, 338-340.
3. Heile: *The Cause of Acute Appendicitis as Shown in Experment.* Munch. med. Wachr., 1925, lxxii, 209-211.

MODERN PLATES

When a man is old enough to wear artificial teeth he has reached the age of susceptibility to cancer, says David W. McLean, D.D.S., in the concluding article of the series "These Teeth of Mine" in the March *Hygeia.*

Any persistent irritation, however mild, to the tongue, lips or cheek, whether it be caused by artificial or natural teeth should be promptly corrected.

The modern upper plate covers the roof of the mouth, thus gaining suction, or the adhesion developed by two wet surfaces. All plates rest on the gum, which in some places is thick and cushiony and in others thin and hard. Much time must therefore be spent in devising methods of taking impressions so there will be gum compression in the same direction and amount.

CARDIOVASCULAR ROENTGENOLOGY*

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ROENTGENOLOGIC visualization of the arteries of living subjects by means of intra-arterial injections of opaque substances is relatively new. The ideal arteriographic medium is one which has high radiopacity, does not cause pain when injected, is freely miscible with blood and has no toxic effect on blood, blood vessels or other organs or systems of the body. Various substances have been used. Thorium dioxide solution has the greatest opacity, and when used in amounts up to ten cc., has no obvious and immediate injurious effect on the blood, blood vessels, or on the body as a whole and reports in the literature would indicate that in small amounts it will have no permanent injurious effect.

Allen and Camp[1] have used amounts up to ten cc. in the diagnosis of thrombo-angiitis obliterans, scleroderma, Raynaud's disease, congenital arterio-venous fistula and arterosclerosis. The findings in thrombo-angiitis obliterans are: "Patchiness" of the obliterative process, that depends on the degree of encroachment on the arterial lumens, the extent of collateral circulation and the degree of obliteration of the collateral arteries. The characteristics of congenital arteriovenous fistula are: Increased size and tortuosity of arteries leading to the fistula and absence of filling of arteries distal to the fistula. Raynaud's disease shows little, if any, change from the normal, while in arteriosclerosis the rather uniform shaggy outline of arteries, the lumens of which are reduced in size, is characteristic.

The chief value of arteriography lies in the information gained as to the pathogenesis, or extent of the lesion present.

The value of fluoroscopic observation of tumors of the mediastinum to determine whether or not they are expansile, as well as their location and size, has long been recognized. Any tumor in contact with the heart or great vessels will pulsate. The eyes will need complete adaptation to darkness for this differentiation in most instances. The expansile tumor will be connected to the heart or blood vessel, the expansion with systole of the heart will radiate in all directions as contrasted to an imparted pulsation, which is always unidirectional. At times areas of calcification, such as the plaques seen in the aorta, are of value in differentiating between tumors of vascular and non-vascular origin. When present, calcification of the cardiac valves can be observed on careful fluoroscopic observation and with the introduction of fast radiographic technique, may be demonstrated on the cardiac film.

Fluoroscopic observation is of distinct value and no examination should be considered complete until the various heart chambers have been observed on the screen. Tumors of the thymus are readily differentiated in this manner. The upper mediastinum of a child is very flexible, the vessels dilate during expiration and collapse during inspiration. Plate I-A demonstrates this point; this increase in the mediastinal shadow might be interpreted as a thymus without further study. Fluoroscopic examination during inspiration revealed a narrow upper mediastinum with a normal trachea.

The most frequent and most important objective sign of cardiac disease is enlargement. This abnormality may be absent in certain cases of angina pectoris and may be so slight as to be undetectable in the early stage of any type of cardiac disease. However, in many patients with rather advanced disorders of the heart, enlargement is the only objective abnormality and the diagnosis of cardiac dis-

*Read before the W. Va. Heart Association at the Wheeling meeting on May 6, 1935.

ease frequently depends on its presence or absence.

Teleoröentgenograms taken with the tube six feet or more from the subject, give an accurate projection of the cardiac shadow on the film. The differential diagnosis of cardiac enlargement usually presents no serious difficulties. Scoliosis of the dorsal spine may produce a distortion and displacement of the cardiac shadow, as may also lesions of the lung or pleura. A pericardial effusion, (Plate I), presents a picture of cardiac enlargement, though the so-called "water bottle" appearance should suggest the true lesion, the cardiac base is widened, and is often associated with engorged efferent vessels; in addition, a plate with the patient in the prone and upright posture will show a definite shift in the cardiac outline when fluid is present.

PLATE I.—Pericardial effusion, prone position. Early passive congestion.

Cardiac hypertrophy, in itself, produces a vicious cycle in that the blood supply to the heart does not increase in proportion to the cardiac enlargement. It is important to keep in mind the type of lesion that produces various types of cardiac enlargement; that is, whether the entire heart is enlarged or whether an individual chamber is enlarged. The shape is mainly determined by the relative enlargement of its several components. These might be classified in the following short and incomplete summary:

Left ventricle:—
- (a) aortic stenosis or incompetence;
- (b) hypertension;
- (c) localized dilatation of the ventricle, secondary to aneurysm;
- (d) congenital stenosis of the aorta.

Right ventricle:—
- (a) mitral stenosis;
- (b) tricuspid stenosis;
- (c) congenital malformations, especially pulmonary stenosis and patent auricular septum;
- (d) disease of the pulmonary artery.

PLATE I-A.—Normal heart and mediastinal shadow—expiration.

Left auricle:—
- (a) mitral stenosis;
- (b) myocardial disease, especially with auricular fibrillation.

Right auricle:—
- (a) mitral stenosis;
- (b) tricuspid stenosis;
- (c) congenital malformations, especially patent auricular septum.

Pulmonary artery:—
- (a) patent ductus arteriosus;
- (b) mitral stenosis;
- (c) diseases of the pulmonary artery;
- (d) hyperthyroidism;
- (e) chronic pulmonary disease.

Aorta:—
- (e) aortic sclerosis or arteriosclerosis;
- (b) hypertension;
- (c) luetic aortitis, with or without aneurysm.

PLATE II.—Cardiac enlargement with hemopericardium coronary infarct. Acute passive congestion.

General enlargement:—
- (a) rheumatic carditis;
- (b) aortic incompetence with mitral stenosis;
- (c) congestive failure;
- (d) pericardial effusion;
- (e) hyperthyroidism.

Such a table is not to be applied too rigidly for cardiac deformity is not altogether a matter of morbid enlargement. To it might be added the diminished size of the aorta in mitral stenosis and the smallness of the pulmonary artery and its branches in certain congenital malformations. I do not believe an acute dilatation of the heart is compatible with life. I have seen cases so diagnosed, proven to be a pericardial effusion associated with coronary occlusion. (Plate II). Aneurysmal dilatation of the cardiac wall may follow a coronary accident, (Plate III). This may

PLATE III.—Aneurysmal dilatation. left ventricle three months, following coronary infarct.

show gradual enlargement as time passes, (Plate IV).

The outstanding example of the service rendered by radiology to this branch of medicine is seen in mitral stenosis. It is now accepted that after the characteristic murmur, enlargement of the left auricle, as seen in the right oblique position, is the surest sign of this common disease, (Plate V).

In aortic incompetence, enlargement of the left ventricle is the conspicuous feature. If the aorta is sufficiently widened or aneurysmal, the syphilitic etiology of the lesion will be suggested, (Plate VI).

Congenital malformations are better understood clinically than ever before, thanks not only to patient pathological observations, but to radiology. It serves in distinguishing con-

genital from rheumatic heart disease in young children. It facilitates the diagnosis of Fallot's tetrology and of congenital stenosis of the aorta. In the latter there is, in addition to the changes in the heart, a grooving of the ribs, secondary to dilatation of the intercostal vessels.

PLATE IV.—Same case as Plate III, 9 months, following coronary accident.

The small, or narrow heart, was unknown before the radiological era. There is no accurate radiographic method of estimating either the volume or weight of the heart, and radiological definition of a small heart simply means that it appears small relative to the width of the chest. The situation of the diaphragm, rather than the shape of the bony thorax appears to be the chief factor in the production of the so-called small heart. If the diaphragm is in the fifth interspace, the heart appears wide; if it is lower than the sixth interspace, the heart appears small. When for any reason, the diaphragm is depressed, the heart rotates slightly to the right and forward, and consequently appears smaller on a radiograph. That the small heart is apparent, not real, is proven by the alteration in the radiological size during pregnancy. A woman with an apparent small heart will have a heart of the usual width during the last two months of pregnancy. This alteration occurs with the elevation of the diaphragm and returns to the usual position shortly following delivery. Many observers have suggested that the toxemia associated with chronic pulmonary tuberculosis causes atrophy of the heart. Necropsy findings do not support this view, and I would suggest that the compensatory emphysema which always accompanies pulmonary tuberculosis depresses the diaphragm, with consequent rotation of the heart to the right and an apparent diminution in size.

Passive hyperemia of the lungs caused by mitral stenosis or heart failure, gives a fairly

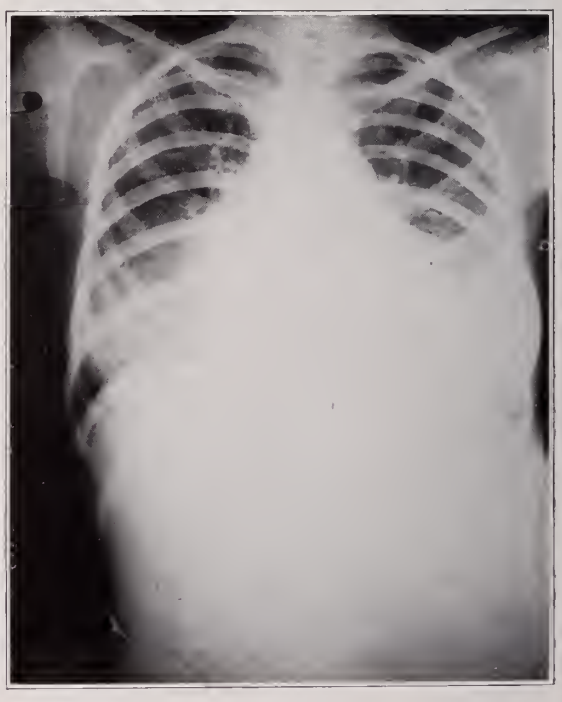

PLATE V.—P-A view rheumatic heart, mitral and aortic lesion with early passive congestion.

characteristic picture. The x-ray appearance of the early stages of passive hyperemia are generalized loss of translucency and marked increase in the density of the vascular shadows. These shadows are also more coarse than normal and their ramifications are visible right out to the periphery of the lungs. The hilar shadows are enlarged and the movements of the diaphragm are restricted. If the

hilar shadows are observed closely on the screen, pulsation can be seen on them. The loss of translucency is due to compression of the alveoli by the distended capillaries and the enlarged hilar shadows and coarse vascular markings resulting from distention of the pulmonary arteries and veins. As the lesion progresses, there is a congestion and enlargement of the lymph glands and later a transudation into the large lymphatics which connect the superficial pulmonary plexus with the parietal pleura.

Certain cases of chronic hyperemia give rise to a miliary appearance in the lungs and the inexperienced observer can easily confuse this

PLATE VI.—Calcification in the wall of an aneurysm. This lesion has been present in a laborer during the past 15 years. The aortic valve is competent. Slight ventricular enlargement.

with miliary tuberculosis. The miliary spots which are scattered all over both lungs in chronic hyperemia, are caused partly by dilated capillaries seen end-on, and partly by exudation of heart failure cells into the alveoli. There are two features which distinguish miliary hyperemia from all other miliary diseases. First, the areas of infiltration decrease in size as they extend out from the hilus, and secondly, the intercostal spaces are wider than normal. Chronic passive hyperemia is the only intrinsic condition of the lungs in which the actual volume of the lungs is increased. The lower lung fields are usually infiltrated to a greater degree and the right side is more marked than the left. Pleural effusion, when present, is usually bilateral with the greater amount of fluid on the right.

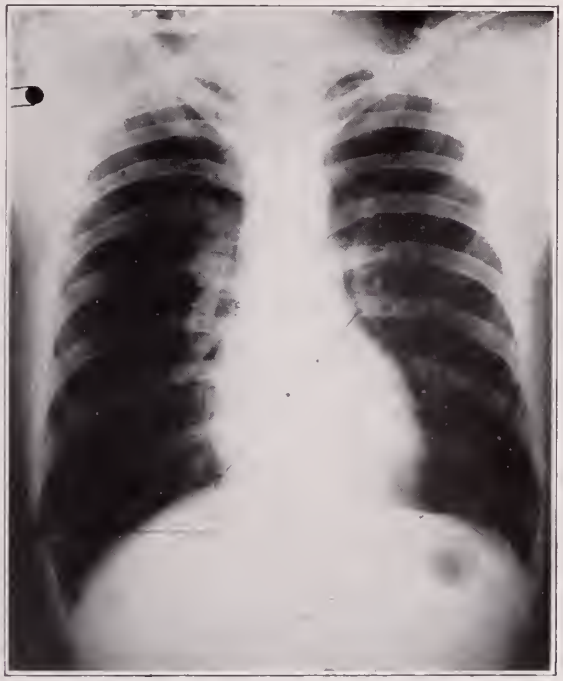

PLATE VII.—Normal heart.

There has, in the past, been considerable disagreement as to the value of cardiac measurement on the x-ray film. This has, in large part, been due to the lack of a satisfactory method of measurement. I will not discuss the various methods used in cardiac measurement but will describe the method I have found and believe to be of the greatest practical value. The method I use was described by Rona and Herman[2]. When the examiner has a fair amount of experience and takes into consideration the contour of the chest, elevation of the diaphragm, as well as the relation of each chamber measurement to the total measurement of the heart, it is a fairly accurate method. Given a normal chest contour

with the normal rotation of the heart, the technique of constructing the various diameters is based on the constant central location of the ostia, no matter how large the chambers become, or in what direction they grow.

The second consideration concerns the direction in which the individual chambers grow in disease. The left ventricles grow toward the apex, leftward and downward; the right ventricle may enlarge to the right and toward the diaphragm if the inflow tract is involved, upward and toward the cone if the outflow tract dilates. The right auricle grows upward and toward the right. I speak of the left auricle last because it offers particular difficulties; it lies posteriorly and never shows on the P-A silhouette and when enlarging it grows toward the right and backward. Therefore, any attempt to measure it on the P-A film seems to be futile, yet it can be measured indirectly. The bulging on the left median border, so-called "mitral configuration," is caused by enlargement of the outflow tract of the right ventricle. In mitral disease, there is a compensatory enlargement of the right ventricle; the pulmonary cone becomes larger, the right ventricle forms part of the left border, and the left ventricle is pushed backward, thus having a lesser part in the left border formation. Consequently, point E moves downward, (Plate VII — normal heart), and the diameter, E-D lengthens, a consequence by which it can be inferred that an enlargement of the left auricle has taken place. This actually measures the outflow tract of the right ventricle. E marks the left auriculoventricular, C the right auriculoaortic, B the right auriculodiaphragmatic point, and A the apex. B-E is the base line which passes through both ostia. The tricuspid lies at the intersection of the base line and the midline at T. The mitral opening is located in the following way: Connect the left auriculoventricular point (E), with the right auriculoaortic juncture (C) up to the midline (D); from here, that is from the median end of the left auricular chord, draw a connection to the apex, the intersection of these two lines thus locating the mitral valve (M). From the mitral valve to the apex, chord M-A, measures the left ventricle diameter; from the mitral opening to the right diaphragmatic point, the right ventricle. The distance between the tricuspid ostium and the right auriculoaortic juncture gives the right auricular diameter, chord T-E.

In order to get any value at all from these measurements, it is necessary to fix the guiding points with the greatest of care. If the positioning of the patient is accurate and there is no rotation, then the spinous processes and the trachea will fall in the midsternal line. The apex may be below or above the diaphragm and should be marked without regard to the diaphragm. The left auriculoventricular point may present considerable difficulties, but the following observation may help: The juncture of the left ventricle with the left auricular appendage, or with the right ventricle, is usually marked by a small notch —the sulcus between the auricular appendage and the ventricle, or the sulcus of the transverse coronary vessels between the ventricles. In the absence of the notch, the left auricular appendage may still be border forming and we will be able to find it by remembering that the appendage does not pulsate, consequently its shadow line appears sharper and unblurred, while that of the pulmonary cone and the left ventricle is fuzzy or double lined. This can be satisfactorily visualized under fluoroscopic control. Cardiac measurement during life, followed by an iodide injection and pictures taken at postmortem, give close correlation, indicating the accuracy of the method.

The measurement differentiates between the chambers of the heart, especially the right and left ventricles, with a reliable correlation between the size of each chamber to the total size of the heart. The range and the mean average of diameters shows a change in, and according to the pathology of the ventricles. Normally, the left ventricle is the largest, its diameter averaging 10 mm. larger than the right ventricle. The right auricle and

the left auricle are of nearly equal size, the right being more often the larger.

REFERENCES:

1. Allen, E. V. and Camp, J. D.: *The Value of Arteriography*. Radiology, June, 1934, Vol. XXII, p. 678-683.
2. Rona, Maurice and Herman, William G.: *A New Adaptation for Cardiac Measurement of the Frontal Silhouette*. Radiology, June, 1934, Vol. XXII, p. 731-738.

REDUCTION OF FRACTURES WITH LOCAL ANESTHESIA*

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I HAVE chosen for discussion this evening a simple subject, yet to me a very practical and important one. It is the use of local anesthesia in the treatment of fractures and dislocations.

In our enthusiasm for the spectacular, we are very prone to neglect or overlook the simple practical remedies at hand. There seems to be ever prevalent an idea with many members of our profession that the more complex or complicated the procedure instituted and carried out in a given condition presupposes the more efficient treatment or the more favorable psychological impression of the physician's importance made upon the patient or his friends.

If the latter is particularly desired in the treatment of fractures, I know of no better method than to use local anesthetic. To one who is not familiar with the effects of local anesthesia in fractures, the results when witnessed are truly astonishing to the patient and to the physician alike, in overcoming the muscular resistance, and painless reduction of the fracture, together with the full coöperation of the patient which is indeed of very great importance.

It is not a new remedy. It was first used by Conway, an American surgeon, in 1885. But owing to the toxicity of the drug used at that time its use was not popularized. Several prominent surgeons in this country and abroad have used it at intervals from 1885 to 1923.

Bohler, of the Accident Clinic of Vienna, worked out a practical technique and popularized its use. Bohler has a record of over 3,000 cases without any complications.

I started this method of anesthesia about eight years ago in an accidental manner. An old man was struck by an automobile which caused a compound fracture of the tibia and fibula. The end of the bones were protruding and he had severe lacerations of the soft tissues. Due to the shock, he was given morphine and salt solution on admission to the hospital. Looking about for something more soothing than iodine, which is a vicious thing to apply as a dressing on the exposed bones and soft tissues, I saturated gauze sponges with one per cent novacaine and applied them as a dressing. I was much surprised and gratified when an hour later I found that I could cleanse the wound and reduce the fracture without the use of any other anesthetic.

The chief difficulty in the reduction of fractures consists of muscular spasm which is caused by traumatized tissues.

In the past it has been assumed, as a matter of course, that a general anesthetic is the only way to overcome this muscular spasm, notwithstanding the evident disadvantage in that type of management. We have also to remember that while general anesthesia puts the patient to sleep it does not always produce complete muscular relaxation. It acts first on the higher centers of the central nervous system, and the relaxation of the limbs is the last phenomenon to arrive, if in fact it does arrive.

If the facts prove that local anesthesia effectively produces muscular relaxation and

*Read before the Central West Virginia Medical Society, Richwood.

abolishes pain in the reduction of fractures, there can be no adequate reason for subjecting the patient to the more dangerous method of general and regional anesthesia.

The method I am about to describe is the immediate injection of the anesthetic drug without delay directly into the hematoma, which forms about the ends of the bones where the torn edges of the endosteum and periosteum absorb it and become impregnated with it.

The necessary apparatus should consist of a 20 cc. Leur syringe, an assortment of needles, and a supply of the anesthetic drug, preferably one per cent nupercaine, because of its more lasting effect. This drug can be procured in sterile ampules ready for use.

There is usually no difficulty in determining the point most suitable for the injection. In cases where the deformity is slight or there is but little hematoma, fluoroscopic or x-ray examination before the injection of the drug will aid in locating the fracture gap.

The point of injection should be properly cleansed and painted with iodine. Occasionally when the fragments override each other it may be necessary to inject the anesthetic drug over each end.

Again, if two bones are broken, as for example, the radius and ulna, the tibia and fibula, then injections must be made into each line of fracture.

In view of the fact that a fracture is usually attended by tearing and stripping of the periosteum from the bone, and traumatization of the soft parts, with loss of bone marrow and contents, it is evident that the hematoma would be more or less considerable about the injured area.

The aim is to make the injection directly into the hematoma which, as Bohler has pointed out, constitutes the finest possible diffusion agent for a local anesthetic. The collection of blood is thus turned to good account and is made to work for the benefit of the patient.

The anesthesia is complete in from four to eight minutes and will last from two to three hours. Furthermore, it can be prolonged by a fresh injection, if circumstances make a prolonged manipulation or a secondary readjustment necessary. This makes it possible to carry out easily and painlessly any kind of manipulation that may be necessary for the reduction and retention of the fragments.

It also makes possible the intelligent coöperation of the patient, a matter of very great importance in connection with the use of the fluoroscope, simplifying and broadening its use, and in eliminating the danger of an inflammable anesthestic agent about the fluoroscopic machine.

In applying traction, skin or skeletal for instance, to a fractured femur where a Thomas splint or a Balkan frame is used, the anesthesia permits painless manipulation while the various adjustments of frame, weights, etc., are being perfected.

More particularly, it enables us completely or as nearly as possible, to reduce the fragments and maintain their position with minimum of weights. The position can be checked with a portable x-ray until we are satisfied with the anatomical results.

Whereas, with the old methods, several days are consumed in adjusting and readjusting, injuring and reinjuring the delicate tissues, checking and rechecking with x-ray until in many instances the patient as well as the surgeon is exhausted, and both are quite willing to leave the fragments alone even though they may not be in as good a position as they should be.

The patients on whom I have practiced this type of anesthesia have ranged in age from a few months to seventy-six years.

The procedure is particularly adapted to persons of advanced age in whom, for one reason or another, general anesthesia is contraindicated.

Oftentimes patients suffering with fractures are in a state of shock incident to the injury, or have just eaten a hearty meal, which would contraindicate a general anesthesia, at any rate for a few hours. These types of patients

can be cared for immediately. The use of local anesthesia serves as a preventive of and treatment of shock.

It also has the advantage of shortening the period of hospitalization, in many cases to a few hours, which is a financial saving to the patient, and quite often to the hospital and physician.

In many instances it enables the laboring man to go on with his occupation while undergoing treatment. Furthermore, such after care as diathermy, massage, etc., is obviated in perhaps fifty per cent of the cases.

Another advantage is the fact that the entire procedure can be carried out single-handed without the aid of an assistant or an anesthetist, which makes its use particularly helpful to the rural physician and to the family physician who still treats his fractures.

First aid treatment of injuries as sponsored by Chief Lambie of the Department of Mines on the whole has done much to reduce the shock, disability and death in the industrial life of our State. This type of patient is being admitted to our institutions in better condition than formerly.

I should like to urge strongly, industrial physicians and surgeons to make it a matter of practice in addition to this usual first aid treatment, to administer local anesthesia to fracture patients before transporting them to the hospital. It will prevent all pain, and lessen the shock incident to the injury and transportation.

Conclusions: 1. Local anesthesia in the treatment of fractures is a simple, safe, and efficient procedure;

2. It produces satisfactory muscular relaxation;

3. Dangers of a general anesthetic are eliminated;

4. The period of hospitalization is shortened, and the number of permanent disabilities is reduced;

5. It reduces pain and lessens the shock in the transportation of patients.

GALL-BLADDER DISEASE

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IN considering diseases of the gall-bladder, we would do well to recollect the fact that the liver, gall-bladder, and bile ducts take origin from the intestinal tract at the level of the duodenum. Thus symptoms referred to the epigastrum can have as their point of origin the liver, gall-bladder, and bile ducts as well as the stomach, duodenum, and pancreas.

In 2.5 mm. embryos the liver anlage (tissue of origin) is present as a median ventral outgrowth from the entoderm of the foregut just cranial to the yolk sac, and its thick walls enclose a cavity which is continuous with that of the gut. This hepatic diverticulum becomes embedded at once in a mass of splanchnic mesoderm — the septum transversum,—which latter structure gives rise to the diaphragm and the ligaments of the liver. This intimate connection affords a reason for referred pain to the shoulder in gall-bladder disturbances, whereas the reference of pain to the scapula is explained by the fact that the organ lies in the same metameric level as the scapula. As the embryo develops, solid cords of cells proliferate from the hepatic diverticulum and form the glandular portion of the liver, whereas the primitive hollow diverticulum differentiates into the gall-bladder and large biliary ducts.

The mature gall-bladder itself is composed of an inner, honeycomb mucosal layer affording a large surface for absorption, a middle fibromuscular layer, and an external pro-

tective layer—the serosa. The ducts are made up of an inner mucosa and an outer supportive and protective serosa in which the elastic fibers are found.

Secretion of bile starts at the third month of intrauterine life and is a continuous secretion throughout the individual's existence. The quantity secreted in 24 hours by human adults has been estimated at 500 to 800 cc. In animals possessing a gall-bladder, its ejection into the duodenum is intermittent. The gall-bladder is, therefore, an organ for the storage of bile during which time it concentrates the latter by the absorption of water. The structure which makes possible the storage of bile in the gall-bladder is a circular muscle called the sphincter of Oddi, situated in the common bile duct at the level of its passage through the wall of the duodenum. This sphincter prevents the bile from entering the duodenum, and by establishing back pressure causes the gall-bladder to be filled.

With the advent of the passage of the stomach contents into the duodenum, chemical and nervous factors are set in motion, which causes relaxation of the sphincter of Oddi and contraction of the gall-bladder with ejection of bile into the duodenum. Substances which are particularly effective in setting this mechanism in motion and which do so every time they are present in the duodenum are as follows: fats, bile salts and their derivatives, the split products of proteins, (peptones and proteoses), cholagogues, such as magnesium sulphate.

Just how frequently are the gall-bladder and bile ducts affected by disease in the average run of the population? What is the incidence of gallstones? With the purpose of answering these questions, a study was made by myself on 1,000 routine postmortem examinations. The age incidence was between 11 and 94 years, with 87.5 per cent over 30 years of age. Females were slightly in excess of males.

Investigation of the recent literature shows that few similar studies have been made on routine necropsies. In text books of surgery and pathology, percentages of cases of gall-bladder disease and stone have been noted. Naunyn found one case in thirty. Hektoen and Reisman found calculi in 25 per cent of all cadavers at autopsy after the sixteenth year. In 17,402 necropsies in ten years, Hesse found 378 cases of gallstones, or 2.7 per cent. From nineteen European and American pathological reports, including 80,802 protocols, he found 4,848, or about six per cent of gallstone cases. Graham, Cole, Copher, and Moore in their textbook noted that 20 to 25 per cent of all adults have gallstones and probably an equal number have cholecystitis without stones, which leads them to the conclusion that 40 per cent of our adult population have disorders of the biliary system. Mentzer, in 633 consecutive necropsies at the Mayo Clinic, found that 21.67 per cent of the adult cadavers had gallstones, and Hansen found that stones were present in the gall-bladder in 24.7 per cent of 392 adult cadavers. The total number of cases with stones in my own study was 325, or 32.5 per cent. Thus it would be fair to state that from 25 to 30 per cent of all adults harbor gallstones on a general average.

Graham, and others, noted that cholelithiasis is found more commonly in women than in men, the ratio being two to five times more frequent in the women. Hesse, in his large series of cases, puts the ratio of one male to seven females. In my own study there were 11 per cent more women than men. Twenty-five per cent of males and females were affected after 40 years of age, with a rapid rise of incidence with each decade until 50 per cent of all cadavers were affected at 70 years.

The most important feature of gallstones is their presence in the bile ducts. This fact has been repeatedly emphasized in the literature. Wilkie found 47 cases of stone in the bile ducts in 257 cases operated upon for cholelithiasis (18 per cent). Clute noted an increase from 8.4 per cent to 17.9 per cent of findings of common duct stones in a large series of cases operated upon for gallstones, in which there was a corresponding increase

in explorations of the common duct. Thus, when stones are looked for, they are found. In a personal communication from Clute at a later date, he stated that his percentage of common duct stones had increased to 21 per cent. These are two representative illustrations of a selected series. Courvoisier has shown the frequency of stones in the bile duct in figures given from postmortem records of the Basle Pathological Institute. In his series 3.9 per cent of all cases of gallstones found in 2,520 necropsies had stones in the bile duct, which was 0.4 per cent of the total necropsies.

In my own study, 78 of the 325 cases with gallstones had stones located in the biliary passages. This is 24 per cent of all the stone cases and 7.8 per cent of the total cases. One could conclude from this that every patient operated upon for cholelithiasis has one chance in four of having additional stones in the bile ducts. In this series there were five instances of gallstones in the ducts after a stone-filled gall-bladder had been removed, and in one of them, the common duct was half filled with stones even after an exploration of this structure at the time of operation. The liver is the source of some of these stones.

It is to be noted that the percentages show no upward or downward trend with the advance of the decades, so that the age of an individual with cholelithiasis does not affect this 24 per cent chance of having stones in the bile ducts. A male with cholelithiasis has as much chance of having a stone in the ducts as a female. The cystic duct and the papilla of Vater seems to be the most frequent extravesicular location of stones; the former harboring 48.7 per cent of these biliary duct stones and the papilla 60.2 per cent.

Graham suggests the word "cholecystopathy" as an all inclusive term for diseases of the gall-bladder in order to retain the word cholecystitis for the true inflammation, and allow this new term to include all pathological anatomical as well as functional disturbances. Cholecystopathy will be used in this sense here.

With regard to the incidence of cholecystopathy, Mentzer found in 612 routine postmortem examinations, evidence of cholecystitic disease in 66 per cent of the cases. Our percentage on 1,000 autopsies comes out 59.6 per cent. Graham, Cole, Copher, and Moore in their textbook state that gall-bladder disease is two and one-half times as frequent in females as in males. In Blalock's series of 888 cases from the Johns Hopkins Hospital, the ratio was two females to one male. In my own series, males and females were equally affected, which is probably explained by the fact that this was a pathological rather than a clinical study.

In the literature it is generally held that gall-bladder disease is most prevalent after the fourth decade, although recent studies show it to be more frequent than one would expect under this age. The lowest percentage of cases with cholecystopathy was 20 per cent in males between 11 and 20 years of age. The highest percentage is 77.6 in males between 71 and 80 years. After the fourth decade never less than one-half the individuals are free from macroscopic signs of a pathologic gall-bladder, and as age advances the general trend is upward.

The microscopic sections were made in this series to confirm suspicious gross findings, but every case was not sectioned, otherwise there would undoubtedly have been a higher percentage thrown over into the pathological groups. In the absence of stones, if the serosa were glistening, the gall-bladder wall not thickened, and no evidence of scar formation in the mucosa, the gall-bladder was considered normal.

Allow me to put in parenthetically at this time that there were 26 instances of carcinoma of the biliary system, in two of which the lesion was primary in the ducts, which themselves are the favorite site of early metastases from gall-bladder carcinoma.

Having ascertained that gall-bladder disease affects on an average of 60 per cent of the population and that gallstones are present in one-half of these instances, the question arises of how to handle this situation. With

modern methods of cholecystography, our ability to diagnose the presence of cholecystic disease is much enhanced; and as we are all familiar with the clinical picture, I shall omit a consideration of that topic. One fact which has come to light recently, however, is worth mentioning. Smithies states that 23 per cent of patients in middle life who have had "biliary tract disease" for as long as five years have no hydrochloric acid secretion in the stomach contents, and a high acidity tends to rule out gall-bladder disease.

Mentzer states that only 15 per cent of his cholecystopathies found at necropsy had given clinical evidence of gall-bladder disease, but this fact to my mind only shows up a weakness in the clinical side. The clinician fails to delve into the patient's history deeply enough and allows the patient's minimizing statements to assure him of the integrity of the gastrointestinal organs. Then, too, the unsatisfactory diagnosis of nervous indigestion, dyspepsia, and biliousness is frequently made before every organ which can give rise to gastrointestinal symptoms has been thoroughly studied. As mentioned above, these organs are stomach, duodenum, pancreas, liver, gall-bladder, and bile ducts, and, by indirect effect, the heart and central nervous system, an example of the latter being vomiting from cerebellar tumor. Syphilis must never be overlooked as a cause of gastrointestinal symptoms, and even in the past few months I have met with two such instances.

The method of treatment of cholecystopathy today is manifesting a swing of the pendulum from the belief that the handling of gall-bladder disease should be entirely by surgery to the use of medical treatment. In a recent article by Blackford, King, and Sherwood, in a study based on a follow-up after from five to fifteen years of 200 typical proved gall-bladder patients not operated upon, the conclusion is reached that; first, 37 per cent of chronic cholecystitis patients have had satisfactory relief over an average of more than eight years without operation; second, 48 per cent of patients with chronic cholecystitis who were not operated upon have either come to operation later, or should have been operated upon later because of continuation of symptoms; third, the other 15 per cent were dead, but only one per cent died directly from gall-bladder disease. They infer on this basis that a patient with uncomplicated cholecystopathy should be given a trial on medical treatment, and if not promptly relieved, should be operated upon.

The treatment of cholecystopathy consists in dietary measures, biliary tract drainage by the use of magnesium sulphate and the duodenal tube, and keeping the bowels open, for which bile salts have been found efficacious. This treatment is applicable to those cases of cholecystopathy in which no gall-stones are present, for there is no medical treatment for gallstones. If a patient with gallstones refuses surgical intervention, the medical prescription can only be considered palliative and does not reduce the possibility of unfavorable complications. It is possible, however, for a patient with stones to become asymptomatic under medical treatment and to consider himself cured, but we know from the pathological standpoint that the patient is not cured.

In contradistinction to the opinion favoring medical treatment, studies since the beginning of this century have shown from 60 to 85 per cent of satisfactory results from the patient's standpoint from surgical interference, and from the surgical department of the same clinic in which Blackford, and others, work, a report of 83 per cent of satisfactory results in gall-bladder surgery is given. A dictum which has had repeated empirical confirmation is that the more the patient's symptoms approximate the typical textbook picture of gall-bladder disease, the better is his chance of relief by surgical measures. No one as yet has brought forth evidence of the danger of temporizing with gall-bladder disease, and its rôle as a killer is small. Therefore, the surgeon would do well to let his medical colleagues bear the burden of caring for gastrointestinal cases, particularly those with obscure symptomatology, at least until such

time as it is felt that surgery will offer definite improvement. The patient with uncomplicated gall-bladder disease should be given a trial on medical treatment, but if not relieved promptly, he should be operated upon. Complications, of course, alter the picture, and such conditions as obstructive jaundice, empyema, or rupture of the gall-bladder multiply the surgical risk from five to ten times, and may cause irreparable hepatic damage even if the patient survives the operation.

Conclusions: 1. Pathological studies have shown that in the average run of the population, abnormal findings in the biliary tract are present in 60 per cent of individuals; gallstones are present in the gall-bladder in 30 per cent, which is one-half of the cases of cholecystopathy, and stones are found in bile ducts in 7.8 per cent of cases, which is 24 per cent of gallstone cases;

2. Only 15 per cent of clinical diagnosis is made in the above group, whereas nervous indigestion, dyspepsia, and biliousness are frequent diagnoses;

3. Medical treatment gives relief over an eight year period in 37 per cent of cases of gall-bladder disease.

4. Surgical treatment is successful in giving relief in as high as 60 to 80 per cent of cases diagnosed as cholecystopathy. There is no urgency, however, in handling gall-bladder disease, and a period of medical treatment is well worth while before undertaking surgical measures.

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BIBLIOGRAPHY

1. Blackford, J. M., King, R. L., and Sherwood, K. K.: Journal A. M. A., Vol. 101, No. 12, September 16, 1933, page 910.
2. Crump, C.: *Incidence of Gallstones and Gall-Bladder Disease.* S. G. O., October, 1931, LIII, 447.
3. Graham, Cole, Copher, and Moore: *Diseases of the Gall-Bladder and Bile Ducts.*
4. Howell: Textbook Embryology.
5. Prentiss and Arey: Textbook Embryology.

THE PRESENT STATUS OF TRANSURETHRAL PROSTATIC RESECTION

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RECONSTRUCTING the urethral orifice at the bladder neck is one of the latest advances in prostatic surgery. The method briefly is that of removing a varying amount of tissue from the floor of the prostatic urethra and lateral lobes of the prostate by means of a high frequency electrical cutting current. This is done under water with a wire loop, introduced through a bakelite sheath and under direct vision through a Foroblique telescope. This method of revision of the prostatic urethra has the advantage of being a comparatively minor procedure, and reducing the length of stay in the hospital, thus cutting down the cost to the patient. It is to be undertaken, however, only by those who are equipped to handle any surgical complications that may ensue. It is a highly technical procedure, requiring skill and patience beyond that of suprapubic prostatectomy. When properly carried out this procedure is a boon to all those who are entering the obstructive phase of prostatic hypertrophy.

During 1932 there was a veritable deluge of literature on the subject of transurethral prostatic resection. Many men had been working for years on problems involved in this new surgery without saying much about their work. When Davis reported over three hundred cases before the New York Academy of Medicine there was immediate and widespread interest in this interesting innovation in prostatic surgery. While there has continued some writing on the subject, most urologists seem to be waiting until late results can be tabulated and a proper evaluation of

the procedure given before reporting their cases. I do not believe it amiss, however, to call attention to the literature on the subject during and since 1932 and give some of our own experiences with resection, also calling attention to the indications for the relief of obstruction by this method.

The pathology of vesical neck obstruction by the enlarging prostate and symptoms growing out of this encroachment will be briefly reviewed: The size of the prostate has nothing to do with the symptoms. The prostate may attain a very large size and cause no obstruction to urination. Conversely, a very small nodule encroaching on the urethra or sclerosis at the vesical neck may cause distressing symptoms amounting even to complete retention. Tissue causing enlargement is usually chronic inflammatory, adenoma or carcinoma. Changes in the urinary tract which follow obstruction at the vesical neck are: thickening of the trigone, sagging of the bladder behind the prostate, trabeculation and formation of diverticuli of the bladder, dilation of the ureters and kidney pelves, atrophy of the kidney, and varying degrees of infection of the urinary tract with multiple abscesses of the kidneys in extreme cases.

Prostatic hypertrophy is a relatively common disease after fifty years. It is said to occur in 25 per cent of men in that age group. Only about 35 per cent of these produce symptoms.

The onset of symptoms is insidious and development is slow, but nearly always progressively downward if without treatment. A gradual onset and slow progress of urinary symptoms are characteristic of this disease and should immediately focus attention on the prostate gland.

The first symptom which usually occurs is frequency of urination, this being mostly nocturnal. Difficulty of starting the stream comes next and as time elapses the stream becomes gradually weaker until the patient may be able to void only a few drops with the greatest effort. He may assume a squatting position to accomplish micturation and his bowels may move with each urinary act. Hesitation becomes marked and the patient may have to strain two or three minutes before he can start urinating. Dribbling follows next and may be the result of loss of sphincter control or due to overflow. Finally, complete retention occurs and the patient is then forced to seek relief whether or not he has done so before.

Other symptoms are less constant. There may be hematuria, polyuria, anorexia, loss of sexual power, epididymitis, loss of weight or emaciation.

It is to be remembered that prostatism, as it is chiefly spoken of today, deals with far-advanced obstruction and its associated secondary changes: cystitis, calculus, dilated and trabeculated bladder, dilation of the ureter and renal pelvis, and other pathologic sequelæ of the vicious cycle of prostatism.

It is the contention of most urologists that 80 or 90 per cent of all prostatic conditions fall in the type that is susceptible of correction by resection. Caulk states that he uses it in 100 per cent of his cases. It is thought by most men, however, that this procedure should be confined to very early cases of obstruction, median bars, cancer of the prostate and small sclerotic prostates, leaving the larger vascular types to other forms of surgery.

Bumpus states that active prostatitis should be treated by other methods. When such methods have failed and residual urine persists, resection of the obstructing portion of the gland is justified. This should not be done however, until the infection has become as quiescent as can be hoped for.

In this operation, as in most others, all types of anesthesia have been tried. The most popular seems to be caudal block or caudal block combined with transsacral anesthesia. The next most popular is low spinal. This is the type we have used in most of our cases, usually giving seventy-five milligrams of procaine in the fourth lumbar space without barbotage. A complete resection has been performed with as little as fifty milligrams.

Local anesthesia may be used, but the technical difficulties encountered do not seem to justify this procedure.

It is just as important for the patient to be properly prepared for resection as for prostatectomy. Bugbee says: "Prostatectomy is a serious operation because the subjects on which one works are poor risks. If they are viewed lightly, no matter what operation is done, serious consequences will ensue."

Each patient when admitted has a complete physical examination, blood urea nitrogen determination, blood count, urine analysis, Kahn, a renal function test and a cystoscopic examination. All patients with any sizeable quantity of residual urine or those who have complete retention are gradually decompressed over a period of from twelve to thirty-six hours. This decompression is carried out with an inverted suction bottle attached to an indwelling catheter. The bottle is lowered every hour until it reaches the level of the bladder. By this method, the pressure in the bladder is kept the same whether the patient be sleeping or awake, whether resting quietly or straining by laughing, talking or coughing. Fluids are forced and methenamine given every four hours. The bladder is irrigated three or more times a day, depending on the degree of infection. When the blood urea nitrogen is near normal limits and the infection becomes quiescent, the patient is ready for operation. It is not necessary to insert an indwelling catheter as a preoperative measure if there is no infection, very little residual urine, and if the nitrogen content of the blood is within normal limits. On the day of operation a bleeding and clotting time is made and the patient is given fibrogen if his coagulation time is above normal. Alcock takes air cystograms on all patients previous to operation. Also he takes urethrograms with iodized oil. Bumpus uses a ketogenic diet for sterilization of the urinary tract rather than medicinal urinary antiseptics.

While the total number of resections which we have done is small, they present a good idea as to what may be expected of resection and to the complications arising therefrom. To date twenty cases have been treated by this method. There have been three deaths.

The first death was from sepsis. This patient was seventy-three years of age, was admitted with a urea nitrogen of 64 milligrams per 100 cc. of blood, a phenolsulphonphthalein output of 15 per cent in two hours and moderately advanced uremia. His urine contained innumerable pus cells. Resection did not relieve this obstruction and a suprapubic cystostomy was done. Three months later a second resection was done. He was dismissed from the hospital five days later but was readmitted in fifteen days, dying a week later. Autopsy revealed a large retrovesical abscess and general peritonitis.

The second death was a patient aged sixty-three, admitted with a manic depressive psychosis and uremia. Four days after operation he had a cerebral hemorrhage with a right hemiplegia from which he died the following day.

The third patient died at home two months following his operation. His condition had been satisfactory and he was up and about, voiding freely. Death occurred suddenly following a meal, probably from coronary occlusion.

This mortality rate seems high but in only one should the operation be assumed to be the cause of death. In this case the patient was such a poor risk that probably no form of operation should have been attempted. This is a mortality of 15 per cent, or five per cent if death from other causes is excluded. This gives a rather fair idea as to the death rate to be expected in dealing with this class of patients. It compares favorably with a death rate of from five to 40 per cent as reported by various urologists for prostatectomy in this same group of operative risks. It was also noted that the patients with beginning obstruction and without infection had a very short stay in the hospital and with few if any complications. On the other hand, several of the patients with obstructive lesions of long standing, with large amounts of residual urine

and infection had complications of various sorts and of varying degrees of severity.

There were three postoperative hemorrhages, one of which was controlled by a suprapubic cystostomy and prostatectomy, one by suprapubic cystostomy and introduction of a Pilcher hemostatic bag, and one which checked spontaneously while being repeatedly irrigated to keep down the formation of blood clots.

There was one secondary hemorrhage ten days after resection. The bladder could not be emptied by catheter, it had to be opened and the hemorrhage controlled by a bag. In this case the bladder was found to be completely filled by large clots distending the bladder half way to the umbilicus. There was one complete failure of the operation and when the patient failed to void over a period of two weeks, during which time he was relieved by an indwelling catheter or repeated catheterizations, his bladder was opened. On viewing the inside it was easy to see why he could not void. The prostate protruded into the bladder about one and one-half inches, the large fungating carcinoma having an opening so small that it could hardly be detected, although a considerable amount of tissue had been removed by the electrotome.

Several of these patients were very poor risks on admission. Five would not have been considered as able to go through the ordeal of prostatectomy and resection was done on these cases only with misgivings. Three had uremia, fourteen had varying degrees of urinary infection, two had diabetes, two had vesical calculi, one had a diverticulum of the bladder, five had hypertension, eight had arteriosclerosis, three had advanced cardiac disease, one had auricular fibrillation, one had manic depressive insanity and four had complete retention of urine on admission. All of them had residual urine and in two cases the bladder was distended above the umbilicus. The age of the patients ranged from 50 to 81, the average age being 66. The average stay in the hospital was twelve and two-thirds days, the shortest being six days, the longest thirty-nine.

Bugbee states: "In parallel cases, the mortality rate from resection will vary little from that from prostatectomy, if both operations are carried out by operators of equal experience, skill and judgment. In this regard, the deaths of patients who are allowed to leave the hospital within a few days after resection has been performed and who die within two or three weeks should be regarded as mortalities from operation."

I quote the following from McCarthy who is a great teacher and who was one of the pioneers in this work: "How much more rational it would be to have an acute awareness of the advent of prostatism and to remedy the condition by this method, thus obviate the vicissitudes incidental to progressive enlargement of this gland, to enhance the economic usefulness of the patient and to insure serenity of mind to him and his family, when his mental capacity is at its peak and his physical resistance is approaching its inevitable decline. This, it seems to me, is the problem of the immediate future, not of urologists, but of the medical profession in general, because it is they who first encounter such patients, and the success of the educational campaign depends on their perspicacity for coöperation."

BIBLIOGRAPHY

1. Herman L. Kretschmer, M. D.: *Diseases of the Prostate.* Practice of Surgery, Dean Lewis IX, Urology.

2. T. J. Kirwin, New York: *Treatment of Prostatic Hypertrophy by a New Shrinkage Method.* Journal of Urology, Baltimore, November, 1934.

3. O. F. Elder, E. G. Ballenger and H. P. McDonald, Atlanta, Ga.: *Two-Way Resection of Very Large Prostates.* Journal of Urology, Baltimore, November, 1933.

4. W. C. Stirling, Washington: *Clinical Evaluation of Transurethral Resection of Prostate.* Medical Annals of District of Columbia, Washington, October, 1932.

5. Theodore M. Davis, M. D., Greenville, S. C.: *The Present Status of Prostatic Resection.* Joseph E. McCarthy, M. D., New York: *Prevention of Prostatism.* J. A. M. A., December 3, 1932.

6. John R. Caulk, M. D., and John F. Patton, M. D., St. Louis: *Influence of Type of Current on Postoperative Complications in Transurethral Surgery.* Clyde W. Collings, M. D., New York: *The Relief of Prostatic Obstruction.* J. A. M. A., January 13, 1934.

7. Theodore M. Davis, M. D., Greenville, S. C.: *Prostate Operation. Prospects of the Patient with Prostatic Disease in Prostatectomy vs. Resection.* J. A. M. A., December 5, 1931.

8. N. G. Alcock, M. D., Iowa City: *Prostatic Resection and Surgical Prostatectomy.* Leon Herman, M. D. and Lloyd B. Greene, M. D., Philadelphia: *Transurethral Prostatic Resection.* William J. Engel, M. D., and William E. Lower, M. D., Cleveland: *Individualizing the Prostatic Patient in Selection of Treatment.* J. A. M. A., October, 1933.

9. John R. Caulk, M. D., St. Louis: *Effects of Use of Cautery Punch Operation on Necessity for Prostatectomy.* Henry G. Bugbee, M. D., New York: *Operative Relief of Prostatic Obstruction.* Herman C. Bumpus, Jr., M. D., Rochester, Minn.: *Results of Prostatic Resection over a Period of Seven Years.* J. A. M. A., November, 1932.

10. Herman C. Bumpus, Jr., M. D., Rochester, Minn.: British Journal of Urology, June, 1932.

THE RELATION OF PHYSICIAN AND PHARMACIST*

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BEFORE going into a discussion of the topic which I have selected, I should like to take you back into the early days of pharmacy, thousands of years ago. Pharmacy, derived from the word "pharmakon" which was used to denote a drug, comes from a root word meaning to mix. The word physician, as I am sure all of you know, was originated when Charlemagne taught medicine under the name of physicus. Those who practiced it, therefore were called physicians. We get the word "druggist" from the root drogue, signifying a dry herb. It had in the early days, quite a different meaning from that which is now ascribed to it. A druggist was one who grew and prepared the herbs and drug plants for the pharmacist, and he in turn made them into fluid extracts, tinctures, and so forth, dispensing them on prescriptions. It is only in comparatively recent years that the two have acquired the same meaning. Chemistry, according to etymologists, is derived from the root word khem, the native name of Egypt where the science had its reputed beginning. This root word which means black, referring to the color of the rich soil of the Nile valley, is the reason chemistry is sometimes called "the black art." The sign ℞ is an astrological sign of Jupiter, brought into use on prescriptions shortly after the beginning of the Christian era.

One of the first records of a prescription is recorded in the book of Exodus when God told Moses to prepare a perfume or confection "according to the methods of the art of the apothecary." To have been referred to in such a manner and for the purpose of rites in worship, indicates that the profession was held in esteem even at this early date. There is a stone tablet prescription in the Metropolitan Museum, which directs the preparation of a fumigator or vapor for inhalation, made by grinding finely a precious green stone (identity unknown). The smoke of this when burned was to be inhaled for its remedial effects. This stone tablet is believed to date back to 1552 B. C.

At different periods in the history of pharmacy there have been examples of the idealization of the calling. One of the most interesting of these has been found in a church at Werder, near Potsdam, Germany, where there is a painting of Christ as an apothecary. The painting, which is believed to date from the early eighteenth century, shows Christ represented in a conventional manner as regards features and dress. He is portrayed in the act of compounding a prescription, with the balance and pharmaceutical containers on the counter before him. The containers bear the symbolic labels (in German) for the virtues of patience, hope, love, steadfastness, help, peace, grace and faith; the latter being in the smallest container, evidently indicating its precious character.

The Egyptians were the first people to make any real progress in medicine and pharmacy. We are using today hundreds of drugs

*Read before the Mercer County Medical Society at Bluefield on November 21, 1935.

that they used before the time of Christ, such as castor oil, turpentine, yeast, wine, myrrh, beer, wormwood, fennel, saffron, gentian, juniper berries, hysocyamus, peppermint and linseed. Also they used a number of drugs that we do not use today, such as lizard's blood, swine's teeth, moisture from pigs' ears, fly specks and even the excreta of various animals. Goose grease was a great favorite. It is claimed that fly specks mixed with an unidentifiable plant was given to babies for colic. No doubt it ended the colic. Some of the prescriptions of the Eber's Papyrus are very simple. For purges they used a mixture of honey, wormwood and onion. From the mildness of the dose, one is driven to the conclusion that ancient Egyptians were not victims of chronic constipation. We have a record of a prescription given in King Tut's time made by compounding figs, plums, grapes, frankincense, cumin, wine, beer, yeast and goose grease. Leaving out the goose grease and mixing the other ingredients in such a way as to allow natural change to occur, this tonic might even be popular at the present time. Another prescription of about the same time was supposed to be a remedy for baldness. This was prepared by mixing the fats of the horse, the crocodile, the hippopotamus, the snake and the ibex, was to be applied freely and, I imagine, proved to be just about as effective as our modern remedies.

Both medicine and pharmacy are hundreds of years old, but pharmacy is a much older profession due to the fact that the knowledge of anatomy among the early Egyptians was necessarily limited owing to their reverence for the human body and the severe penalties inflicted upon those who practiced dissection. Even the priests who were the doctors in this early era and were paid out of the royal treasury, though permitted to accept fees also, were not allowed to make incisions in the abdominal cavity, necessary in the embalming process, but such operations were performed by the Pardschites whose position in the community was comparable to that of the executioner. Despite their limited knowledge of anatomy, however, the Egyptians have recorded themselves as recognizing the pulse.

It is interesting to find in the records of history, the incipient modern conceptions of ethics in both professions. Herodotus, the Greek historian, writing in the fifth century B. C. says of the early Egyptians that no doctor was permitted to practice in any but his own branch, indicating the tendency toward specialization even at that remote period. There were penalties provided also, for adding to, diminishing or varying in any way the ingredients of a perfect prescription, showing that substitution was even then a recognized evil. As far back as 1352 the King of France issued a law prohibiting anyone who was not an apothecary, a student or a mendicant monk from practicing medicine. And if I got started, I believe I could write a book on the evils of that very thing: illicit practice in the present day. In the fourteenth century the apothecaries were made by law to subscribe to a formal oath before being permitted to practice. They swore to live and die in the Christian faith, to speak no evil of their teachers or masters, to do all in their power for the honor, glory, ornament and majesty of medicine; to give no remedy or purge without the authority of a physician, to supply no drugs to procure abortion, to prepare physicians' prescriptions exactly, neither adding, subtracting, nor substituting anything without the express permission of the physician, nor to keep bad or old drugs in stock.

It is this very ideal, that of lifting the profession to its true position of dignity and popular respect that is the heart of my appeal tonight. This end can be accomplished when and only when there are first, men of high professional ideals above the levels of mere commercialism, of true ability and recognized training; and second, complete coöperation between the two callings—medicine and pharmacy. Just as the interdependence of pharmacy and medicine runs back through countless ages of history, so the issues before us today depend almost entirely upon the degree

of coöperation between doctors and druggists.

Let us examine the aim of such coöperation. Is it not solely for the benefit of the human race? Is it not that the patient may benefit from more skilled diagnoses and more carefully compounded prescriptions? I quote from La Wall in his recent book, *Four Thousand Years of Pharmacy*: "The physician who fills as well as writes his own prescriptions except in the case of emergency or for some other satisfactory reason, is establishing a side line in which he is not usually qualified either by training or experience to do justice to his patient in the manner and form in which the medicine is administered. It is the function and responsibility of the physician to diagnose disease and recommend treatment. If medicines are required, the wise physician writes prescriptions to be filled by competent pharmacists, for this is the pharmacist's particular province and specialty, for which he has been especially trained." Similarly, no honest and conscientious pharmacists would presume to step into the field of the physician to diagnose and prescribe. His is ever the function to direct the patient to the skill and training of the physician.

But the question may well be asked, what is the practical application of such coöperation? It seems to me there are two distinct lines of endeavor through which these desired results may be accomplished. First there is that of educating the general public in their attitude to the two professions; and second, there is that of legislation.

Much is being done in recent years in this matter of educating the general public. Leading drug manufacturers such as Eli Lilly and Company, and Parke, Davis and Company, have expended large sums in truly profitable advertising—profitable not only in terms of dollars and cents, but profitable in terms of well-being of our nation and longer span of years. Life insurance companies have made intelligent use of these facts. "Consult your doctor today"; "Your druggist is your friend" are slogans which they have made to impress the public mind. However, in the less spectacular methods, each individual pharmacist can do a tremendous amount of good in faithfully pointing to the physician as the only diagnostician. Similarly it is up to the doctors in their individual contacts to stress the importance of trained and licensed operators in compounding of their drugs. The dignity of the profession can in no other way be so forcefully impressed upon the laity as by a wholesome attitude of respect on the part of the members of the one profession for the other.

In the matter of legislation much could be said. That much has been done already in this field is readily seen, and yet there is much that could be improved in our modern commercial conditions in this field. I am sure the hearty spirit of coöperation between our two professions, of which we are so justly proud, will guarantee a sympathetic attitude toward the independent registered druggist in his struggle against regimentation. The Fair Trade Bill, being promoted to stabilize prices in drug and other stores would tend to eliminate the unfair competition in "pine board" and chain store enterprises. If patent medicines and quack remedies are to be sold at greatly reduced prices by these unprincipled price-cutters, it is natural to suppose that more and more would be used and the public health endangered just in proportion. In another aspect the pharmaceutical profession is needing legislation; namely, that of store ownership by a registered pharmacist. For many years I have indulged at intervals in pipe dreams of the glorified drug store, devoted solely to prescription service, medical equipment, etc. Perhaps it is fantastic, but as it is seen in the large cities, it has only then attained the professionally dignified status that it really should merit.

TIRED LEGS?

To cure the patient, varicose veins must be removed or obliterated because they cause normal circulation to be reversed; that is, blood is being held in the diseased veins rather than being carried toward the heart, declares Dr. Hilbert F. Day in "Varicose Veins—Their Cause and Cure" in the March *Hygeia*.

AN AMBULATORY METHOD OF SKIN-GRAFTING SMALL AREAS BY USE OF ELASTIC ADHESIVE

By WAYNE BRONAUGH, M. D.
Belpre, Ohio

MANY patients present themeslves with total loss of skin of small areas which when treated by dressings and allowed to heal by an ingress from the edges, require several weeks and entail much expense.

It is common knowledge that epithelization in cases of varicose ulcers takes place most rapidly under an elastic adhesive dressing applied directly to the wound. Two factors are responsible for rapid healing in these cases: (1) The tension of the dressing compresses the varicose veins removing the circulatory stasis in that area; (2) The dressing is sufficiently water-tight to keep the wound continually bathed in its own secretions. This lymphatic exudate has the necessary bacteriophagic property to destroy ordinary infections present and to prevent bacterial invasion. Also it is the best media for growth of new delicate epithelial cells.

It was this second factor that stimulated the use of elastic adhesive in a case of pinch skin-grafting, irrespective of the uncertainty as to whether the grafts would remain in place under the dressing.

Resume of Case: A boy ten years old was run over by an automobile. While pinned underneath the car he hooked his left leg over the exhaust pipe, receiving a third degree burn on the posterior lateral aspect just above the ankle. After ten days there was a total loss of skin over a rectangular area four inches by two and one-half inches. This was treated two weeks with office dressings, with a decrease in size to an area three and one-half inches by two and one-fourth inches. It was then decided to skin-graft.

The wound was prepared for grafting by applying an elastic adhesive dressing. Upon its removal four days later, the wound was found to be clean, healthy and ideal for the implanting of grafts. It was bathed with normal saline and nine pinch grafts about three-sixteenths of an inch in diameter were applied. The wound and grafts were covered with elastic adhesive, the dressing being applied directly, encircling the extremity and under a moderate amount of tension.

The patient was permitted to become ambulatory at once. The dressing was not removed for nine days when it was found all grafts had taken, they had remained in their exact positions and had nearly covered the entire raw surface. A second dressing was applied and upon its removel nine days later, the wound was completely healed.

The wounds left by removal of the grafts were also treated with elastic adhesive, exactly as the burned area. At the first dressing, nine days later, seven of them had healed and at the second dressing eighteen days later they were all healed.

The patient was very active at all times and complained of no discomfort.

Most of the wound secretions escaped from the inferior margin of the dressing and through the pores in the adhesive. Enough was retained to keep the wound and grafts well bathed.

The apparent advantages of the method are: (1) It can be an office procedure; (2) The patient is ambulatory; (3) The trouble of keeping the grafts moistened with normal saline is eliminated; (4) Daily inspection of the wound and daily dressings are eliminated; (5) The pressure from the tension dressing keeps the grafts in place, keeps the granulations level, enabling epithelization from each graft and the wound edges to occur more rapid.

Many of the more extensive granulating wounds can be, to a great advantage, grafted by this method, and I feel the method can be made applicable to any type of skin-grafting.

The elastic adhesive used was Elastoplast.

AN INTERESTING CASE OF HYSTERICAL PSYCHONEUROSIS

By J. E. Offner, M. D.
Superintendent, Weston State Hospital
Weston, West Virginia

This case, admitted to The Medical Center of Weston State Hospital, March 2, 1936, was one of a young girl, who, after she had taken an examination in a business college and attended the picture show with a couple of girl friends in the evening was seized by paroxysms of laughter, and presented history as follows:

Case Report: Miss .....; age, 18; white; single; occupation, student.

Family History: Father's age, 42, living and well. Mother's age, 40, living and well. One sister, age 13, in good health.

Chief Complaint: On Wednesday evening, February 26, 1936, someone in the theatre audience made an irrelevant remark which provoked general laughter. The patient being in the audience, also began laughing at 10 p. m., when the incident occurred, but failed to stop laughing when the humor subsided. At 11:30 p. m., a physician was called, who administered one-fourth of a grain of morphine sulphate hypodermatically, but the patient failed to become quiet. At 4 a. m., the following morning the further administration of three repeated one-eighth grain doses of morphine sulphate at intervals of one-half hour each, the patient stopped laughing, became quiet and fell asleep. At 7 a. m., she awoke laughing and continued until exhausted. At 9 a. m., she fell asleep again; at 10:30 a. m., she awakened to call for food. She was unable to stop laughing and succeeded in swallowing small amounts of toast. She complained of a sensational heat over the anterior thoracic region, principally between the breasts. The palmer surfaces of the fingers and hands were said to be numb, and a needle-pricking sensation was complained of. The sensations spread up the medial side of the arms to the elbow. She stated that her head seemed to be swimming intermittently, and she became somewhat confused.

At 11:30 p. m., Thursday, February 27, she again went to sleep; she lost consciousness which was not regained until Tuesday evening, March 3. During the unconscious period she laughed intermittently, about every half hour for short intervals, and then would sink into lethargy. On Friday evening, February 28, with no improvement in her condition she was referred to a hospital in Baltimore, Maryland. Her parents took her to this institution where her prognosis for recovery was pronounced grave, and hospitalization in a psychopathic institution was recommended. She was returned to her home Saturday, February 29, and arrangements were made for her entrance into Weston State Hospital, Sunday evening, March 1.

Present Illness: On entering this hospital, Monday, March 2, the patient was in a state of lethargy and greatly exhausted. She would become semi-conscious at intervals, at which time she laughed weakly, and would sink back into a lethargic condition. She was treated symptomatically, pending a diagnosis. On Tuesday evening, March 3, she became semi-conscious, and was able to hear her nurse and take small quantities of food, but her vision was obliterated. Palpebral and pupillary reflexes were both sluggish.

On Wednesday morning, March 4, her vision began to clear, but her lids remained closed for a greater part of the time. She still laughed at intervals, but attacks were not so frequent. She became rational and complained of a sensation of tightness in her throat, numbness in her hands, and a hypersensitiveness over a circumscribed area about the umbilicus. Her condition remained about the same until Wednesday, March 11, 10:30 a. m., when she was taken to surgery.

Past History: The patient had measles, pertussis, scarlatina and chickenpox in early childhood. During adolescense she complained of ostalgia and numerous osteid processes were formed along the anterior surface of the right tibia. An orthopedist was consulted, who attributed the condition to focal infection of either the tonsils or the kidneys. At the age of nine, a tonsillectomy was performed, and the signs and symptoms disappeared.

Two years later the ostalgia recurred, although not as severe as it had previously been, and this time was attributed to scoliosis, and a body brace supporting the affected lumbar region was recommended and used for about a year, at which time the condition had practically subsided. However, at the age of puberty the ostalgia recurred with each menstrual period.

The patient has idiosyncrasies in her choice of food, avoiding sweets, and selecting highly seasoned food—pickles, cheese, etc.

She developed acute appendicitis in 1933, and an appendectomy was performed without complication.

Menstrual History: Patient began menstruating at the age of thirteen years, the flow lasted for nine days, but the interval established at approximately twenty-eight days.

Metrorrhagia was provoked by any exciting stimuli. Menstruation was accompanied by abdominal cramps and mastodynia, and necessitated the patient going to bed for about one day or until the flow was established. Ostalgia would recur in the right tibia femur and there was usually a slight inguinal lymphadenopathy.

On March 24, 1935, preparatory to examination of her first year in college, an eighteen-day metrorrhagia began, she was given a course of thirty-five doses of antuitrin hypodermatically, besides iron compounds and sodium cacodylate. From this time up until August 1, 1935, she was free from the condition between periods for not longer than two weeks at a time. August 1, 1935, the original condition was established.

The last menstrual flow stopped February 21, 1936, but was reestablished a week and one-half later and continued scantily up until the time surgery was performed, March 6.

There has been a slight mucopurulent discharge since puberty. In 1933, there was suppression of menstruation for a period of seven weeks, which was probably due to excitement and phobia.

Patient was nervous, showing signs of increased susceptibility and emotional motility which resulted in nervousness that necessitated withdrawal from high school during the freshman year.

Physical Examination: General Appearance: This patient is a young female, fairly well nourished, white, single. There are numerous small pits over face and body from chickenpox. Head: Normal in size and shape. Eyes: Pupils react to light and accommodation, no irritation or inflammation. Ears: Negative. Nose: Negative. Mouth: Gums and mucous surfaces healthy in appearance. Teeth: In good repair and all present. Throat: Healthy in appearance, posterior pharynx slightly hyperemic. Tonsils have been removed. Neck: Slight thyroid enlargement, not nodular.

Abdomen: There is an old right rectus muscle operative scar in the right lower quadrant, extending from about five cm., below the umbilicus ten cm. downward and about three cm. wide. The lower one-third portion of the scar is slightly retracted, being attached to the underlying structures. The abdominal

wall is thin; muscle tone, normal. Nothing otherwise abnormal noted.

Genitourinary: Vaginal examination revealed that the patient had a rather relaxed vaginal wall for a girl of her age. There is a slight mucopurulent discharge, some tenderness in the right side; although the patient complains of more pain in the right side, there is a slight enlargement felt over the ovarian area on the left side. The cervix is forward and upward, and the fundus of the uterus was backward, showing a complete retroversion of the uterus. The uterus is not fixed, however, there is stenosis of the internal and external os. Slight inguinal adenopathy. Extremities: The anterior surface of the right tibia on palpation shows some mottling. All other extremities normal.

Reflexes: Palpebral and pupillary reflexes slightly retarded. Abdominal reflex greatly exaggerated. Other superficial reflexes normal. Deep reflexes slightly exaggerated. No pathological reflexes present. Neurological Status: No paralysis. All neurological findings negative for any central nerve involvement. Due to an old injury of the right lower limb there is flaccidity of the musculature, but no definite atrophy.

Laboratory Findings: Urinalysis showed large number of squamous epithelia cells, and a small number of renal cells. Small number of pus cells present. Urine clouded with amorphous phosphates. Kahn test, negative.

Blood Analysis: R. B. C., 5,010,000. W. B. C. 7,250. Hg 85 per cent.

Preoperative Diagnosis: Hysterical psychoneurosis due to disturbance of the endocrine functions by retroversion of the uterus and stenosis of the cervix, and possible adhesions. Possible cyst of left ovary.

Operative: Anesthetic begun at 10:40 a. m., stopped at 11:45 a. m. Surgery begun at 11:45 a. m., completed at 12:15 p. m.

The patient was placed in lithotomy position and a small core removed from the cervix by electrocautery, in an effort to correct the stenosis causing pain on menstruation.

The patient was then put in a prone position and a median incision was made extending from three and one-half cm. below the umbilicus, downward 10 cm. to the peritoneum. The peritoneum was then incised and the abdominal cavity opened. Numerous and dense adhesions had attached the omentum to the old appendiceal scar on the inner abdominal wall, pulling up the head of the cecum, also adhering firmly to the right ovary. These were carefully dissected off and the ovary freed. Adhesions were dissected as carefully as possible from the abdominal wall which necessitated removal of five to ten cm. of masserated omentum. The raw surfaces were covered and all bleeding controlled.

The uterus was then brought forward and suspended by bringing the round ligaments together and attaching to the anterior horn of the uterus, in order not to overcorrect the uterine displacement and interfere with bladder and endocrine functions. Both ovaries were slightly enlarged, and had a mottled appearance due to numerous corpora hemorrhagica. Both Fallopian tubes were normal with the exception of a small cyst in the fimbria of the right tube, which was removed.

No further pathology was found. The abdomen was closed in the usual manner: Peritoneum—with No. 1 plain gut. Muscle—two interrupted sutures, No. 1 plain gut. Fascia—No. 2 chromic, continuous. Skin closed with skin clips and two silk-worm gut retention sutures.

The old scar was then removed, freeing the adhesions to the underlying fascia and approximating the edges with skin clips.

Patient returned to room under routine order, reacted in one and one-half hours. She required very little hypnotics and no narcotics. Her symptoms entirely disappeared by the time she reacted.

Postoperative Diagnosis: Hysterical psychoneurosis, superinduced by mental fatigue and disturbances, metabolic interference due to adhesions, retroversion of the uterus and stenosis of the cervix interfering with metabolism and endocrine functions.

The above case has attracted nation-wide attention and has solicited the voluntary aid of all types of cults, religious creeds, phrenologists, astrologers, spiritualistic mediums, chiropractors, osteopaths, patent medicine advocates, distilleries, quacks, etc.

Letters offering voluntary service have been received from thirty-five states in the Union. The patient has a volume of fan mail and various proposals. Since the case has been before the public eye, we present it for the interest of the profession.

The condition of hysteria belongs in the borderline or episodic states between the psychoses and the psychoneuroses. It is characterized by abnormal mental condition that manifests itself by great emotional mobility, increase of susceptibility, and occurrence of symptoms of varying degrees of severity, involving the emotions, the sensory, the motor and the vasomotor systems, and frequently the occurrence of abnormal states of consciousness and of the mind.

Etiology: This condition is usually manifested between the ages of puberty and the thirtieth year. Women are affected somewhat more commonly than men.

Prolonged illness, overwork, worry, change in one's surroundings, intense mental strain and anxiety may be the predisposing causes. Among the exciting causes are fright, shock, worry, unhappiness, fear, inability to attain one's desires, imitation, homesickness, acute infectious diseases, toxemia, various interferences with metabolism and endocrine functions, etc. A combination of any of these causes may act as a direct excitement of a hysteric condition.

In some cases, as a result of prolonged illness, overwork, insufficient and improper food, worry and toxic conditions, there may occur a decrease in normal powers of inhibition. In these individuals in the presence of some acute, exciting cause, attacks occur that are characterized by symptoms of lack of self-control.

We believe this to be a typical case of a specific hysteria, as set forth in the signs and symptoms of the particular case.

After corrective surgery, as has been performed, we believe the prognosis is very favorable for complete recovery.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Urging Early Diagnosis: The founders of the tuberculosis movement realized that only through broad education of the public could any progress against tuberculosis be made. The new discoveries of Koch, Naegeli, Pirquet and others, the promising results of Trudeau's method of treatment, the pioneering activities of Biggs, inspired hope that the disease which had resisted medical science so long could be curbed. Yet this could be accomplished only with the understanding support of the people. They must know that tuberculosis is curable and preventable, that it is not a stigma, and that facilities for diagnosis and treatment must be liberally provided. Wisely the founders chose as the motive power of the new movement, public education. In the early days the exhibit and the lecture were the chief means of arousing public sentiment. Later the press, printed matter and motion pictures were added. Today practically every avenue of reaching the attention of the masses is used.

Each year tuberculosis associations select a certain theme which all associations are urged to emphasize during that year. Printed matter and publicity aids are produced in advance. To make a definite impact the "release date" is set for April 1. Early diagnosis was the subject of the first of these campaigns hence it was called "Early Diagnosis Campaign," a label which has stuck even though subsequent themes were on other aspects of tuberculosis control.

This year the slogan is "Fight Tuberculosis with Modern Weapons." The two objectives aimed for are (a) to remind people of the early symptoms of tuberculosis and the importance of consulting the doctor on their appearance, (b) to arouse interest in the routine search for early tuberculosis before there are symptoms and physical signs.

To achieve the former, booklets, articles and outlines for talks have been prepared calling attention to the four most common symptoms of early tuberculosis, (as determined by surveys of large numbers of sanatorium patients), namely, fatigue,

loss of weight, cough that hangs on and indigestion. Blood spitting, pleuritic pain and other symptoms are also mentioned. It is carefully explained that none of these symptoms is pathognomonic, but that any of them should be considered as a danger signal to be investigated by the physician. An effort is made to create appreciation for the x-ray. In all the educational material care is exercised not to cause undue alarm.

The second objective sought is to encourage routine search for symptomless tuberculosis among groups of young people such as high school and college students. What is the justification for advocating this new departure?

Tuberculosis sanatorium statistics indicate that the ratio of "early cases" admitted has not increased appreciably during the past ten years. This in spite of years of earnest effort to urge people to obtain medical advice on the appearance of the early symptoms enumerated above. Many conscientious doctors constantly on the alert for tuberculosis have despaired of increasing their batting average of discovering the disease in its incipiency. The reason for that failure cannot be blamed entirely on the apathy of patients nor on the lack of vigilance of doctors. It is to be accounted for in part by the fact that the transition from "early" or "silent" tuberculosis to the moderately advanced stage is usually a relatively swift one and only by the barest chance is the minimal case detected. So long as we are obliged to wait until symptoms betraying pulmonary damage drive the patient to our offices, we shall probably continue to despair.

Wrestling with this deplorable state of affairs, efforts have been made to devise some way of detecting tuberculosis in its silent stage among apparently healthy people. Chadwick, Rathbun, Myers and others pioneered in introducing the scheme of examining routinely, with tuberculin and the x-ray, students in colleges and high schools. This procedure, modified in various ways, has "caught on" throughout the country. The routine examination of all students brings to light early cases that might otherwise be undetected and progress to disabling disease. Lees, who examined last year all students of the University of Pennsylvania by the tuberculin x-ray method, found 17 cases of adult type pulmonary tuberculosis of whom all were symptomless and only one was dismissed from the school. Contrast this with the usual method of "passive" case finding, i. e., waiting for persons to apply to the doctor for the relief of symptoms. Lees reports that during the course of the same year, 15 cases of tuberculosis had been discovered among students who came to the doctor because of one or another symptom. Twelve of the 15 were advanced cases and were obliged to leave school.

In high schools the story is substantially the same except that fewer cases of adult type tuberculosis are found. However, follow-up work of adolescent children with significant childhood type lesions leads the investigators into many homes where there is an open case. This is important, for the real threat to the youngster is probably not the calcified remains of a primary complex but daily contact with a source of infection. No wonder proponents of the routine tuberculin x-ray plan emphasize the value of locating such sources of infection. In grade schools the routine method has not been found so productive but where funds and facilities are available, it is certainly an excellent addition to our school health program.

It is with the hope that the public will accept these newer ideas for the protection of young people that demonstrations are carried on in several important colleges and schools. It is hoped that ultimately parents will depend upon the family doctor to examine their children as a matter of course with tuberculin and the x-ray when indicated. In this educational campaign tuberculosis associations look to the physician for guidance and counsel.

PREVENTABLE DEFORMITIES

There is considerable popular misunderstanding regarding one special field of medicine called orthopedics. This is due to the fact that the name is not derived from the Latin word *pes*, meaning foot, but from two Greek words *orthos*, meaning true, straight or free from deformity, and *paedos*, meaning child. Dr. Garry deN. Hough, Jr., discusses "Preventable Deformities" in the March *Hygeia*.

Orthopedics has the entire body as its field, and individuals of all ages come under its scope. There are two kinds of deformities: the congenital, or those with which an individual is born, and the acquired, or those which develop subsequent to birth.

When one studies the science of embryology and considers the marvelously complex process by which the human being develops from a single cell into a complete individual, the remarkable fact is not that there are occasional failures in the proper development but that such failures are not more frequent.

PRESIDENT'S PAGE

Perhaps many of you listened to the Town Hall meeting, March 5, when Dr. Davis of the Rosenwahl Foundation and our own inimitable Dr. Morris Fishbien discussed the future of the practice of medicine. I think you will all heartily agree with me when I say that Dr. Fishbien gave the good Dr. Davis a fine hiding. Dr. Davis was rather indefinite as to what the program should be. In fact, he did not seem to know where he was going. On the other hand, Dr. Fishbien knew very definitely where he was headed and went there in a hurry, and took the hide off Dr. Davis, and also Julius Rosenwahl enroute.

Perhaps many of you do not know that the Council of the State Medical Association, at its last meeting in December, 1935, authorized a committee to be appointed to study various insurance plans as applied to medicine. On that committee I have appointed Dr. W. R. Hughey of Charleston, and Doctors G. A. Smith of Montgomery, and Ray Wharton of Parkersburg. These three men are very well qualified by previous study and by natural temperament to make a very careful study of these subjects and will report in the future, probably at our next state meeting.

There is no subject that will come before our State Association that transcends this in importance. I hope the membership of the West Virginia Medical Association will make some effort to inform their minds regarding these matters so that we may discuss this problem intelligently at our next meeting.

Perhaps socialized, or state medicine, may not be so very distant as we think. Twenty-five years ago when many of you were then practicing medicine, practically all of the physician's income came directly from the patient to the physician. In recent years, and more and more each year, the physician gains his remuneration through other sources; through compensation, insurance, and the various other things. One naturally expects that state medicine, if it comes, would come in as a full-blown institution, more like an onset of a case of lobar pneumonia. Perhaps it may come insidiously as chronic pulmonary tuberculosis. All of you remember in your grammar school days, we had that verse from one of Keat's poems regarding vice when he said:

"Vice is a monster of so frightful mien
As to be hated needs to be seen
But seen too oft familiar with her face
We first endure, then pity, then embrace."

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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THE DIRECTORY RACKET

About once every year the physicians of West Virginia are solicited by one firm or another to take space in an "insurance directory" for insurance executives. Usually there is no direct charge for inserting a doctor's name in any of these directories, other than a $15 assessment to pay for setting the type.

The publishers of these insurance directories generally point out that the big insurance companies frequently employ physicians in distant points to make insurance examinations, treat accident victims, etc. Upon such occasions, it is intimated that the insurance company will turn to its "insurance directory" furnished by the publisher and select a doctor whose name is published therein.

Apparently there are still doctors who fall for this directory gag; otherwise it would not still be in existence. It is hard to understand. Common sense will tell us that any insurance company worthy of the name would not select its examiners or physicians from a list of doctors who purchased space in a commercial directory. We venture the assertion that more than 90 per cent of all insurance companies in the United States own and consult the last edition of the Directory of the American Medical Association.

About two years ago we secured a copy of one of these insurance directories and wrote letters to some 20 West Virginia and Ohio doctors whose names appeared therein. We asked each one if he had ever received any insurance queries or any insurance patients as a result of the directory. All of the doctors who replied to our letter answered in the negative. Yet these 20 doctors had contributed $300 to the coffers of the directory publishing company.

THE JOURNAL has published many editorials on this same subject in recent years. As a result, we are inclined to believe that West Virginia is now a rather barren field for the insurance directory racket. If any of our members receive further literature in regard to directory listing and feel called upon to reply, we suggest that they use that old but still effective expression—"Nerts."

FIGHTING TUBERCULOSIS

It is reported that 300 persons sick with tuberculosis are waiting for admission to our state sanatoriums—Hopemont and Pinecrest. Nearly all of them are advanced cases needing bedside care. One reason for this situation is delay in diagnosis. After many years of organized educational work in the anti-tuberculosis campaigns with a constantly decreasing tuberculosis death rate, it seems strange that so many people postpone a visit to a physician.

This situation is discussed in the April "Tuberculosis Abstracts" printed elsewhere in this issue of the JOURNAL. Undoubtedly additional sanatorium beds are greatly needed and the state legislature should provide for them even if the cost of delayed hospitalization is tremenduous. But, as pointed out, "new generations are constantly appearing on the scene and older ones forget so easily." Therefore, intensive educational methods still seem to be an important weapon in the fight to control tuberculosis.

The West Virginia Tuberculosis and Health Association is now organizing the 1936 "Early Diagnosis Campaign." Through literature and posters, exhibits, talks, motion pictures and other publicity, the campaign aims to explain the early symptoms of tuberculosis and also the reasons why tuberculosis should be anticipated even before any symptoms appear. In urging people to go to a

doctor for a careful examination the information will be broadcasted that physicians today are able, because of modern weapons such as the tuberculin test and the x-ray, to be more precise in making a diagnosis than they were some years ago.

If, as Chadwick, Myers, Rathbun and others believe, the annual harvest of adult-type tuberculosis is the aftermath of childhood infection, there appears to be every reason why these latest modern weapons should be used not only on contacts with known cases but also on youth generally for their own protection and for finding the unknown sources of infection. It will be much easier and more satisfactory to physicians and certainly far less expensive to the state when tuberculosis is discovered and treated properly while it is only infection or minimal disease.

The field clinic service of the State Tuberculosis Association has been conducted for several years to demonstrate and prove the value of this method of attacking the problem in West Virginia. The tuberculosis association recommends formal acceptance by the medical profession of "mass tuberculin testing" of 'teen age children by competent physicians approved by county medical societies.

G. C. R.

COSMOPOLITAN'S MIRACLE MEN

In the January issue of the *Cosmopolitan* magazine appeared another article by Rex Beach on another of medicine's "Miracle Men", this time an osteopath with a manipulation cure for arthritis. Beach's first article of this nature, as most readers will remember, was about the toe-twisting Dr. Locke of Canada. While it is the general policy of the JOURNAL to ignore such things, we have just come into possession of a letter written to the editor of *Cosmopolitan* by Dr. Howard T. Phillips of Wheeling which is so well written and so aptly phrased that it is published herewith in its entirety. The letter follows:

"In the present issue of *Cosmopolitan* you carry another of Rex Beach's write-ups of a man whose ability can be no greater than is possessed by many others of his profession—osteopathic physicians. The claims made for him by Beach are, of course, greatly exaggerated and unwarranted. Many people suffering from ailments such as Beach mentions will seek out this 'Miracle Man' only to find that he can do no more for them than other men practicing his kind of medicine in their own community. Many people suffering from a progressive, intractable form of arthritis or other more or less incurable diseases will make the trip to this man, spending money often needed to make them comfortable at home, only to return more despondent than ever, more pessimistic than before, with less faith in any kind of medicine and with bitterness in their hearts for a magazine that helps to spread such propaganda.

"Such has been almost the universal attitude of those who have sought out that other 'Miracle Man' — Locke, whose efforts are neither scientific nor humanitarian, but monetary. Ask the experience of any honest physisian and his observations will coincide with my own statement that I have not seen a single person benefitted by the toe-twisting of this man Locke, and from a small city, like the one in which I live, the number of persons who have made the trip to see him is considerable, and the curative result obtained by any of them is exactly nil.

"The point I want to make to you is that you are aiding and abetting (whether or not you endorse Beach's write-up) a hoax upon the American public, and in so doing must share the responsibility of the evil resulting from it.

"You have carried under the guise of reading material the most blatant advertisement these men could have, and had this man Locke paid you many thousands of dollars for the article you carried, he would still be tremenduously ahead financially.

"If Beach is not being paid by these men

for writing articles calling them 'Miracle Men' he should be.

"If you are not being paid for carrying his articles you should be—at least the usual rate for advertisements or even more for it is much more subtle and cleverly done than most advertising.

"The public is losing by reading and heeding these articles written by a man whose only qualification for being able to judge the merits of any healing science is the possession of an imagination vivid enough to enable him to write popular fiction.

"In closing, pass this letter along to Beach whose pain in the left chest—over the heart—is probably not cured. The chances are that he has only been lulled into a false sense of security by the manipulations of the osteopath, and if this be true he will have other and more severe attacks in the future at which time he will be told—not by a toe-twister—not by a miracle rub doctor, but by his Old Family Physician that he has an 'ANGINA PECTORIS.' However, while he is resting between its horrible attacks he may have time to meditate over the irreparable harm he has done in starting his fellow sufferers on a useless trek to these 'Miracle Men'—wasting their time, their money and often their faith in humanity as a whole and the idea must sooner or later come to him and to you that much of this could have been prevented had he not written these articles and had they not been carried (if not endorsed) by a widely read and popular magazine such as *Cosmopolitan*."

DELINQUENT MEMBERS

For the benefit of all Association members who have not yet sent in their 1936 dues to their county secretaries, we wish to point out that April first is the deadline and all unpaid members will be placed on the delinquent list at that time. The names of delinquent members are removed from the JOURNAL mailing list, they are not permitted to register at the Association conventions, and they are denied admittance to the convention meetings. This is in accordance with the provisions of the Association by-laws.

It is to be hoped that all members of the Association will be duly paid up before the delinquent list goes into effect. However, a delinquent member may be reinstated upon the payment of his dues for the current year. Delinquent members whose dues are not paid by December 31 are automatically suspended from the Association.

That times are better for the medical profession is evidenced by the fact that on March 18, 1936, there were 180 more members paid up than on the same date in 1935.

DISEASE BULLETIN REVISED

The State Health Department has received the first copies of the recently revised bulletin on the Control of Communicable Diseases. The bulletin was prepared particularly for use by physicians, teachers, parents and also as a basis for study by clubs and other groups.

It contains the rules and regulations of the Public Health Council with regard to the reporting of communicable diseases, placarding of homes and quarantine measures for the protection of the health of the public. Detailed information is given regarding a number of the forty communicable diseases which physicians are required to report to the local, county or city health officer. This information includes sources of infection, modes of transmission, period of communicability and the latest methods for controlling the disease.

An appendix has been added to the bulletin which gives specific information on the procedure for laborbatory diagnosis and collection of specimens.

The bulletin is for free distribution.

EARLY WHITE MAN

Several years' study of the medical history of the conquest of America and of accounts left by early explorers and historians has convinced Dr. P. M. Ashburn that prior to the coming of the white man and the Negro, America was a land almost free from infectious diseases. Dr. Ashburn's series "How Disease Came with the White Man" begins in the March *Hygeia*.

COUNTY SOCIETY NEWS

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Prichard Hotel on Thursday, March 12, 1936 at 8:30 p. m. The scientific program consisted of a lecture by Dr. Austin Hayden, secretary of the Board of Trustees of the American Medical Association on "Medical Economics." Preceding the meeting, a dinner was given in honor of Dr. Hayden.

About 60 members and guests were in attendance.

CHAUNCEY B. WRIGHT, *Secretary*.

HARRISON COUNTY

The Harrison County Medical Society held its regular monthly meeting at the Stonewall Jackson Hotel, Clarksburg, on the evening of March 5, 1936. The speakers were Dr. Eldon B. Tucker, Morgantown, whose subject was "Present Status of Anesthesia in West Virginia," and Dr. H. H. Haynes, Clarksburg, whose subject was "Carcinoma of the Rectum." Lantern slides were shown to illustrate the latter subject.

Dr. F. W. Light, formerly of Clarksburg and a member in good standing of the Harrison County Medical Society, has moved to Illinois and will be permanently located there.

CREED C. GREER, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on Tuesday evening, March 10, with an excellent attendance. The guest speaker of the evening was Dr. C. C. Coleman, neurologist, of Richmond, Virginia. His subject was "The Present Scope of Neurological Surgery," which was a most interesting and practical lecture illustrated with lantern slides. Discussion was opened by Dr. A. A. Wilson of Charleston.

Following the scientific program, a short business session was held and the following doctors were admitted to membership: Howard W. Meredith, Carbon; Joseph H. Selman, Charleston; James S. P. Beck, Charleston; C. T. Upchurch, Gallagher; Thomas H. Blake, Charleston, and S. M. Stone, Charleston.

P. A. HALEY, II, *Secretary*.

MONONGALIA COUNTY

Dr. Eldon B. Tucker of Morgantown was the essayist at the March 3 meeting of the Monongalia County Medical Society which was held in the Green Room of the Hotel Morgan. His subject was "Status of Anesthesia in West Virginia," and brought forth an interesting discussion among the members present.

The meeting was preceded by a dinner served at the hotel at six o'clock.

G. R. MAXWELL, *Secretary*.

OHIO COUNTY

The eleventh regular scientific meeting of the Ohio County Medical Society was called to order by the secretary protem, Dr. H. G. Little. He called on Dr. Howard Phillips to introduce the speaker, Dr. Eldon Tucker of Morgantown. Dr. Tucker was substituted for Dr. Walter Simpson who, because of sickness, was unable to fulfill his engagement.

The subject of Dr. Tucker's address was "Anesthesia." In part, he gave statistics on the status of handling anesthetics in the various hospitals. Thirty-nine out of forty-two hospitals said in 1934 they were satisfied with their methods of handling anesthetics. Twenty-four out of thirty-four hospitals said in 1935 that they desired improvements in their anesthetic departments.

The speaker concluded his paper with a discussion of the value of the surgeon and patient of a well-trained physician - anesthetist. General discussion was opened by Dr. Robert Reed, Jr., followed by Drs. Thornton, Lukens, Andrew Wilson, Howard Phillips, Fieman, Dannenberg of Wheeling and Dr. Covert of Bellaire. On invitation by Dr. Bond, Miss O'Neil and Miss Longley of the Ohio Valley General Hospital staff commented on the paper.

About forty members and guests were present.

The twelfth regular scientific meeting of the Ohio County Medical Society was held on Friday, March 6. The president, Dr. Russell Bond, presided. The minutes of the tenth and eleventh regular meetings were read and approved. The secretary announced the death of Dr. John Carter of Elm Grove, W. Va. The chairman appointed the following committee to draw up resolutions of respect to Dr. Carter, who is an honorary member of the Ohio County and the West Virginia State Asso-

ciation: Dr. C. A. Wingerter, chairman; Dr. H. T. Phillips and Dr. Robert Reed, Jr.

The paper of the evening was presented by Dr. G. W. Grier, röentgenologist of the Allegheny Hospital, Pittsburgh, and chairman of the Committee on Cancer Education of the Pennsylvania State Medical Association. Dr. Grier's subject was, "How Shall we Attack the Cancer Problem." The speaker discussed the extreme advisability of early diagnosis in cancer which was accessible to therapy; namely, cancer of the breast, cancer of the skin, cancer of the cervix. He feels that the campaign of cancer education to the public has been quite efficient, in fact, that the educational campaign has extended far beyond the possibilities of successful therapy. The paper was closed by a discussion of various practical points of technique in radiologic therapy. General discussion was participated in by Drs. C. H. Clovis, W. A. Quimby, H. T. Phillips, W. K. Kalbfleisch, Chester Holly, and John Gilmore.

Dr. J. H. Alexander and Dr. M. R. Hoon of Pittsburgh accompanied Dr. Greer to Wheeling and spoke briefly of the surgical and medical aspects of cancer therapy.

Forty-three members and guests were present.

W. M. SHEPPE, *Secretary*.

PARKERSBURG ACADEMY

The regular meeting of the Academy of Medicine was held at the Chancellor Hotel, March 5, 1936. The meeting was preceded by a dinner, immediately following which a short business meeting was called by the president, Doctor H. H. Veon.

The minutes of the last meeting were read and approved. A letter was read from the Cabell County Medical Society, inviting the members of the Academy of Medicine to attend a joint meeting, March 12, 1936, at Huntington.

The members of the Academy of Medicine were urged to complete the statistical blanks which were presented to them under the former administration.

Following the business meeting, the speaker of the evening, Doctor John Wyckoff, Dean of New York University School of Medicine, was introduced, and read a most interesting and instructive paper on "Congestive Heart Failure."

Discussion was opened by Doctor B. S. Parks, followed by Doctors R. H. Wharton and U. L. Dearman.

BERLIN B. NICHOLSON, *Secretary*.

RALEIGH COUNTY

The Raleigh County Medical Society met Thursday, February 20, at 7:30 p. m., at the Beckley Hotel. The members heard Dr. James King of Radford, Virginia, speak on the subject of "Electropyrexia in the Treatment of Paresis." Dr. King used lantern slides in demonstrating the effect of the treatment.

Dr. J. W. Bolen and Dr. B. K. Peters were approved for membership. Twenty regular members attended the meeting.

L. M. HALLORAN, *Secretary*.

GENERAL NEWS

POST GRADUATE INSTITUTE

Fifty-four of the ablest medical educators in a city noted for its medical education—Philadelphia—constitutes the faculty of the Philadelphia County Medical Society's Post Graduate Institute, to be held April 20 to 24 in the Bellevue-Stratford Hotel, according to the complete program just issued.

Considerable interest has been expressed in this undertaking, which the county society hopes to make an annual event, and many physicians already have sent in their registrations. Notices have been sent to doctors throughout Pennsylvania and the nearby states and a large attendance is expected.

Beside the regular program of lectures, those attending the Institute will have an opportunity to hear Dr. Frank Lahey, of Boston, director of the Lahey Clinic there, deliver the J. Chalmers DaCosta Foundation oration at the Philadelphia County Medical Society's meeting on the evening of April 22.

The Institute's general subject will be cardiovascular and renal diseases, which the essayists will discuss from many angles. One approach will be prevention, to which little attention was paid by doctors of the older schools, which is recognized as a very practical mode of attack today.

Etiology will receive much emphasis, since the cause and effect relationship between disturbances of the blood vascular and the renal systems is so often demonstrable but difficult to accurately define. The effect of ureteral lesions and obstructions upon the kidneys will be discussed in several papers, also, as will the matter of differential diagnosis among the forms of nephrosis and glomerulonephritis.

Of particular interest to the surgeons will be many of the newer treatments for heart disease, including alcohol injections, cervical sympathectomy

and posterior root injections for relief of angina pectoris pain. Such procedures as cutting splanchnic nerve roots, and removal of the suprarenal glands for the relief of essential hypertension, total thyroidectomy for certain heart conditions, section of the sympathetics for Raynaud's and Buerger's disease, wiring of aneurism, etc., also are to be touched upon.

Evaluation of various vaccines employed in bacterial endocarditis, discussion of new methods of using digitalis, use of the various diagnostic aids in both heart disease and renal ailments are other interesting phases of the program.

While the Institute's chief appeal to the doctors in this section of the country should be the lectures themselves, there is an added attraction in that the Institute is being held in a city which has for two centuries been a center of medicine. Since 1717 when John Kearsley began to instruct young men in the practice of medicine its reputation as a training ground for physicians has been of the finest. It boasts the first hospital, the first medical textbook, the first clinical medical lecture and many other medical "firsts."

The Philadelphia County Medical Society was suggested at a meeting on December 1, 1848, and was founded January 16, 1849. From the very beginning it took an active leadership in preventive medicine, sanitation, and other things affecting public health. Its second resolution, April 17, 1849, was in the interest of the general practice of vaccination, and the first national sanitary congress took place in Philadelphia in 1857.

RADIUM NUMBER

The March issue of the *Radiologic Review and Mississippi Valley Medical Journal* (Quincy, Ill.) is the ninth annual "Radium Number" of that publication. It is entirely devoted to radium, containing ten original articles, especially written for this issue by leading American radium therapists on various phases of radium therapy. There are contributions by Jones of Cleveland, Schreiner and Wehr of Buffalo, Soiland of Los Angeles, Murphy of Minneapolis, Fox of Dallas, Levin and Sittenfield of New York, Swanberg of Quincy, Simpson of Chicago.

The issue includes three important contributions on gynecologic malignancy. Jones of the Cleveland Clinic, reviews 610 cases of carcinoma of the cervix treated at that institution by radiation, concluding that radiation is the best treatment and that their five-year curability is 24.5 per cent. Schreiner and Wehr of the State Institute for the Study of Malignant Disease at Buffalo, N. Y., summarize the results of 3,105 gynecologic malignancies treated at their clinic and make a vigorous plea for additional education on the part of both the public and the profession that will lead to an earlier diagnosis being established. They state their "firm belief that fifty per cent of the mortality could be avoided if the diagnoses could be made earlier."

Swanberg summarizes his efforts to further simplify the application of heavily filtered radium from multiple centers (Paris technique) in the treatment of uterine cervical cancer. He believes the simplest technique is the use of his "T" shaped adjustable uterine radium applicator that is easily assembled in accordance with the length of the uterine canal, and the introduction of bakelite capsules in the vaginal fornices as used at The Radium Institute of London. A statistical summary of the latest five-year studies (1925-29 series) at the University of Paris are given as proof of the unusual efficiency of this method of radiotherapy (464 cases treated with a 35.6 per cent five-year curability.)

CONSTITUTIONAL REVISION

At the Wheeling meeting last May the House of Delegates authorized a special committee to make a thorough study of the Association constitution and by-laws and to report upon necessary or desirable changes at the coming Fairmont session. The members of this committee, Dr. W. E. Vest, Huntington; Dr. A. H. Hoge, Bluefield, and Dr. R. K. Buford, Charleston, met in Charleston on March 17, at which time it was agreed to suggest the following changes:

Section 1, Article V, (Constitution) to include the two vice-presidents as members of the House of Delegates and to give the District Councillors floor privileges but no vote in the House of Delegates.

Section 11, Chapter V (By-laws) to remove the last four lines of the section relating to an early method of selecting the Association vice-presidents.

Section 2, Chapter VI (By-laws) designating the first vice-president of the Association as successor to the president in case of the president's death, resignation or removal from office.

Section 1, Chapter VIII (By-laws) to eliminate compulsory meetings of the Council on each day of the annual meeting and to make all Council meetings, except that on the day preceding the annual session, subject to the call of the chairman or upon petition of five members.

Section 2, Chapter X (By-laws) to allow more

than 20 minutes for the presentation of papers and lectures by invited guests at annual meetings.

The committee discussed at considerable length Section 3 of Chapter IX of the By-laws relating to the granting and revoking of county medical society charters. This section now provides that charters may be issued or revoked by both the Council and the House of Delegates. The committee felt that this dual power should be eliminated and authority to grant and revoke charters should rest entirely with one or the other of the two bodies.

A majority of the committee felt that authority to grant and revoke county society charters should rest with the Council, due to the fact that the By-laws (Section 3, Chapter VII) authorized the Council to act as the board of censors of the Association and to consider all questions involving the right and standing of members, whether in relation to other members, to the component societies or to the Association. Therefore the majority report of the committee will recommend that Section 3, Chapter IX of the By-laws be changed to give the Council the sole authority and responsibility for granting and revoking county society charters. A minority report will be made, recommending that such authority and responsibility rest with the House of Delegates.

All members of the committee requested the JOURNAL to state that there was no controversy or misunderstanding in the committee relative to fixing the above-mentioned authority and responsibility. It was agreed by the committee that a minority report be submitted so that the membership of the House of Delegates would have an opportunity to vote and decide for itself whether the granting and revoking of charters should rest with the House of Delegates or with the Council. It was felt that the question could be more easily reached through the expedient of voting on one or the other of the two reports.

The committee will be glad to receive suggestions from members relative to further proposed changes in the Constitution and By-laws. Such suggestions should be sent either to Dr. Walter E. Vest, First Huntington National Bank Building, Huntington, or to the Executive Secretary, Box 787, Charleston.

SANITATION PROGRAM

One of the most important Works Progress Administration projects from the standpoint of protection of the public health of the citizens of West Virginia, the Community Sanitation Project, under the direction of Dr. Albert M. Price of the State Health Department, was forty per cent completed on March 1, according to an announcement made by the director. Since the program started December 15, 1933, there have been 94,495 sanitary privies built in the state and there are now on hand 20,320 orders for additional ones.

To the person who is not familiar with sanitary conditions in the state, the construction of nearly 100,000 privies would seem to make the state fairly sanitary. However, in order to completely safeguard the health of West Virginians from filth-borne diseases the construction of 140,000 more sanitary toilets will be necessary. Good results can be seen already from the work that has been done so far as shown from the fact that the diarrhea and enteritis death rate among children under two years of age has dropped from 32.2 per 100,000 population in 1933, to 26.6 in 1934 and to (estimated) 22.2 in 1935. Typhoid fever morbidity and mortality rates have been cut in half since 1932.

One unsanitary toilet can affect the health of persons for miles around by providing breeding places for flies which may infect milk or food and may pollute the water supplies. The purpose of the sanitation project is to sanitate entire communities by erecting sanitary privies at each home or farm where there is no sewage connection. These privies must conform to standards designated by the State Health Department. The building material is furnished by the property owners and the labor is paid for from WPA funds. Construction work has been considerably handicapped by the bad weather for the past three months but it is going on rapidly now.

Over thirty states are now participating in community sanitation projects. West Virginia has consistently led all the other states in production. Much favorable public opinion has been developed during the past two and a half years for the program as it effects the health of the citizens of the state.

This project is under the supervision of the United States Public Health Service and is nationally known among health authorities as an outstanding health demonstration.

COLLEGE OF PHYSICIANS

Twelve West Virginia physicians were in attendance at the annual meeting of the American College of Physicians at Detroit the week of March 2, 1936. Dr. G. H. Barksdale, Charleston, was inducted into fellowship at the Detroit meeting and Dr. Walter E. Vest, Huntington, was elected to the

Board of Governors from West Virginia to succeed Dr. John N. Simpson, Morgantown, resigned.

Among the West Virginia physicians in attendance were Drs. D. C. Ashton, Beckley; G. H. Barksdale, Charleston; J. L. Blanton, Fairmont; Charles B. Chapman, Welch; F. C. Hodges and Walter E. Vest, Huntington; Albert H. Hoge, Bluefield; Frank J. Holroyd, Princeton; L. R. Lambert, Fairmont; D. A. MacGregor, Wheeling; L. C. McGee and P. A. Tuckwiller, Charleston.

COMMUNICATIONS

THE MINERS' HOSPITALS

About the year 1893, Governor McCorkle wrote a bill for Senator James Beavers to create three miners' hospitals in West Virginia. Senator Beavers introduced the bill in the Senate, having no idea the bill would be adopted, as it was only intended for political purposes, but both Democrats and Republicans were afraid not to vote for it for fear of losing the miners' vote; so the bill passed both houses and became a law. The hospitals were built and denominated as miners' hospitals Nos. 1, 2, and 3. These hospitals were run as intended to, for political purposes for several years, until someone raised the question in the legislature that this was class legislation and the bill was illegal.

The legislature then changed the name of these hospitals to State Hospitals Nos. 1, 2, and 3, to get away from class legislation. This is like putting a Coca Cola label on a bottle of "moonshine." The hospitals are run in the same way they always have been, with one exception: The Welch Hospital has gone into the contract business. They charge so much a month for groups of men whether they remain well or get sick. I can see no justice in the State going into the hospital business in competition to privately owned hospitals. Is this legal to tax the people all over the state for a hospital to take care of the sick in a local community? Is it right for these hospitals to do contract or list practice? It seems to me it would be well for the Board of Control to make the Welch Hospital an annex to Pinecrest Sanitarium. This sanitarium is doing a good work and is not a local affair. This sanitarium can not take care of half the tubercular cases that are waiting in their homes, dying for want of institutional care. These unfortunate tuberculosis cases have to wait in their homes from one month to a year before they can be admitted in this hospital for treatment. This is very unfortunate, because it is only in the early stages of this disease that they can be cured. The crowded condition makes this institution only a "death house" by patients having to wait so long before admittance. This is not true with patients who can pay. If they are "pay patients" they can be admitted most any day. I believe all state institutions should treat all the people the same, regardless of their station in life or financial condition. The Board of Control in my mind could save the lives of hundreds of these tubercular cases that are now dying all over southern West Virginia, for want of proper care by annexing Welch Hospital to Pinecrest Sanitarium.

Why not take Welch Hospital out of politics, out of contract practice, out of competition to privately owned hospitals, out of a local community and make it what its name implies—a state institution? Do this for suffering humanity!

S. B. LAWSON, Logan, W. Va.

PHILADELPHIA CLINICS

On January 14, 15, 16 and 17, 1936, the West Virginia Obstetrical and Gynecological Society attended its first annual clinic session in Philadelphia. The clinics were very instructive and valuable as is evidenced by the following briefly presented programs.

Tuesday, January 14, we attended operative clinics at the Jefferson Medical College by Drs. P. Brooke Bland, Thadeus L. Montgomery and Harry L. Stuckert. Their cases were presented in their entirety and the operative technique and findings were shown.

Dr. Edward Burt, the staff pediatrician, demonstrated the cisterna puncture in the new born for intracranial hemorrhage. He exhibited several interesting specimens.

The afternoon was taken up by clinical demonstrations of venereal diseases complicating pregnancy, given by Dr. Mario Castello. He gave us some very interesting demonstrations on the use of the actual cautery.

January 15 was spent in the Philadelphia Lying-In Hospital with Dr. Norris W. Vaux in charge. The morning was taken up by lectures and talks on the use of forceps and a brief presentation of their past five-year period with the treatment of eclampsia. Following this, there were several plastic gynecological operative procedures demonstrated, followed by a caesarean section. We were given a demon-

stration in regard to x-ray in relation to obstetrics by Dr. Paul A. Bishop and a demonstration of some of the biological tests of pregnancy by Dr. John T. Bauer.

In the interval between the surgery and lectures we were taken on rounds through the various wards and the nurseries.

In the afternoon we were shown more plastic gynecology, another caesarean section, and then attended Dr. Vaux's lecture to the senior Jefferson Medical College students, at which time a talk was given on the use of forceps.

On Thursday, January 16, we were the guests of Dr. Chas. C. Norris at the University of Pennsylvania Maternity Hospital. We were shown, during the morning hours, several very interesting gynecological operative procedures, mostly of a plastic nature. We saw one caesarean section during this morning hour and the afternoon was given over to ward rounds through the various maternity pavillions at the hospital.

On Friday, January 17, we were back to the Jefferson Medical College and the morning hours were taken up by several gynecological operations by Drs. Harry Stuckert and Thaddeus L. Montgomery. The new evipal, intravenous anesthesia was demonstrated on two cases by Dr. John Dugger.

The afternoon was spent with Dr. Mario Castello again in the out-patient clinics, showing more interesting work done on the cervix with the actual cautery.

Most noteworthy of the entire clinic tour was the way the members of this society were received by the physicians of Philadelphia. There seemed nothing too small or too large for them to undertake to show us, and each day was certainly a very full program from beginning to end.

On Tuesday and Friday the members of the Society were the guests of Dr. P. Brooke Bland at luncheon from one until two o'clock; on Wednesday the guests of Dr. Norris W. Vaux for luncheon from one until two o'clock and on Thursday the guests of Dr. Chas. C. Norris for luncheon from one until two o'clock.

It is to be earnestly hoped that the future annual clinics of the West Virginia Obstetrical and Gynecological Society will find more members in attendance. We are very sure that the ones who did attend this year will avail themselves of the same opportunity in the future, as the entire week was one of instruction and enjoyment.

The members of the society wish to take this opportunity to express their appreciation to the president, Dr. Harry G. Steele, Bluefield, West Virginia, for his untiring efforts in having made this initial annual clinic a success.

Edwin J. Humphrey, M. D.

OBITUARY

DR. JOHN T. CARTER

Dr. John T. Carter, 85 years of age, died at his home in Triadelphia on the evening of March 6, 1936, following a two week's illness. Below will be found the story of Dr. Carter's life and influence, as embodied in a resolution adopted by the Ohio County Medical Society of which he was an honorary member:

The members of the Ohio County Medical Society, in their regular meeting on Friday, March 6, 1936, heard with deep sorrow of the death, that evening, of the society's revered, senior member, Dr. John T. Carter. Befitting action was taken in the authorizing of a committee to present the society's tribute to his memory in an expression of sincere esteem and deep affection.

Dr. Carter had the rare distinction of rendering medical service to a community, and that the one of his birth, for over fifty-five years. He entered upon his life's work with a preparation exceptionally thorough. His preparatory education was received at West Liberty Normal College. He spent two years in Washington and Jefferson College and his last two years in Princeton University, from which he received an A. B. degree in 1871. Three years later he graduated in medicine with honors, from the medical department of the University of Cincinnati. He accepted interne service in the Good Samaritan Hospital of that city, and afterward held the position of house physician.

Following this postgraduate training, he received an appointment of assistant director in a Massachusetts state institution in Boston. Here he remained five years. His preference being for private practice rather than for institutional work, he returned to his home community, opening an office in Triadelphia. Contrary to an ancient tradition of a prophet being without honor in his own country, Dr. Carter was promptly honored and welcomed by neighbors and friends. Because of exceptional preparation for his life's work and his forceful and dignified personality, he was early recognized by his professional brethren and the laity as a physician of exceptional ability. His name became a household word through-

out a wide rural region. He gave faithful and conscientious service to his community through two generations, continuing his activities as a physician until his final illness of two weeks. A great host of grateful and sorrowing friends will long cherish his memory.

Dr. Carter was for many years an active and later an honorary member of the Ohio County Medical Society, and its members desire that this tribute of our high regard be inscribed upon its records and a copy be presented to his family with assurances of our sincere sympathy.

ROBERT J. REED,
CHARLES A. WINGERTER,
HOWARD T. PHILLIPS,
Committee.

WOMAN'S AUXILIARY

McDOWELL COUNTY

The Auxiliary to the McDowell County Medical Society met on March 11, at the Appalachian Community Rooms, Welch, W. Va. Mrs. G. L. Straub, president, presided.

During the business session, Mrs. J. E. Davis, treasurer, gave a report for the year. Mrs. J. L. Sameth gave a detailed report of the dance held at Christmas time. The Auxiliary voted at this time to contribute ten dollars to the fund being raised for the recent fire sufferers in Welch.

The following officers were elected to serve until April, 1937: President, Mrs. J. Howard Anderson, Hemphill; president-elect, Mrs. E. Vermillion, Welch; first vice president, Mrs. H. T. Schiefelbein, Welch; second vice president, Mrs. C. C. Cochran, Carswell; secretary, Mrs. N. F. Coulon, Thorpe; treasurer, Mrs. H. G. Camper, Welch; historian, Mrs. J. L. Sameth, Welch.

The next meeting of the Auxiliary will be held on May 13, at the Appalachian Community Rooms, Welch.

HELEN COULON, *Secretary.*

FAYETTE COUNTY

The Woman's Auxiliary of Fayette County Medical Society met on Thursday, February 20, at the Woman's Club House in Montgomery. Luncheon was served at one o'clock. Hostesses were Mrs. H. F. Troutman of Page and Mrs. Ralph Hogshead of Montgomery. Immediately after luncheon Mary Virginia Stallard, Jeanna and Florence Troutman, daughters of Mrs. Stallard and Mrs. Troutman, entertained the Auxiliary with several cleverly executed dances.

During the business session Mrs. V. E. Holcombe, Charleston, gave a very interesting talk concerning county Auxiliary aims and purposes and the accomplishment of such.

Mrs. Guy Gibbs, president of the Woman's Club, was present at the meeting and made a few remarks to the Auxiliary.

Following the usual discussion of business the meeting adjourned until March.

The Auxiliary to the Fayette County Medical Society met on March 19, at the Mountaineer Hotel, Mt. Hope, W. Va., for a one o'clock luncheon. Mrs. W. R. Derrick, Price Hill, and Mrs. F. S. Harkleroad, Harvey, were joint hostesses for the occasion.

The business session was presided over by Mrs. George Fordham, president. Following the customary reports and a discussion of a few pending problems, the meeting adjourned until April.

MRS. F. S. HARKLEROAD, *Secretary.*

KANAWHA COUNTY

The Auxiliary to the Kanawha Medical Society met on March 10, at the Charleston West Side Woman's Club. Mrs. John W. Moore, president, presided over the thirty-one members present.

Mrs. M. F. Petersen and Mrs. Spencer Bivens were the speakers for the evening. Mrs. Petersen reviewed the March issue of *Hygeia.* Mrs. Biven's subject was "Cancer" and her remarks were taken from an article on the subject from a recent issue of *Hygeia.*

During the business session it was decided by the Auxiliary to elect a "president-elect" each year beginning with the coming election which will be held in April. Following the appointment of a nominating committee the meeting adjourned until the April meeting.

MRS. V. T. CHURCHMAN, JR., *Secretary.*

MARION COUNTY

The Auxiliary to the Marion County Medical Society met on February 25, at the Fairmont Hotel, Fairmont, W. Va. Sixteen members were present. Mrs. Harry V. Thomas, president, presided over the meeting.

Mrs. S. S. Hall reviewed "American Medicine" by Dr. Henry Sigerist during the program. This was an interesting presentation as well as instructive.

Following the business session adjournment was

called until the next meeting which will be held the last Tuesday in March.

Announcement was made of the death of Mrs. E. P. Smith's mother, Mrs. Martha E. Robinson of Barracksville. Members of the Auxiliary extended their sympathy to Mrs. Smith.

Dr. and Mrs. Amos H. Stevens announce the birth of a son, David Arthur, on March 1.

BEATRICE B. WISE, *Secretary*.

LOGAN COUNTY

The Logan County Medical Society Auxiliary met on March 3, with Mrs. Harold Vanhoose, president, presiding over the meeting. Nine members were present.

Mrs. Lawrence W. Lawson addressed the group on the subject of "Poliomyelitis." Mrs. Lawson's subject was presented in a most interesting manner.

Announcement was made of the birth of a daughter, Martha Ann, to Dr. and Mrs. J. W. Carney, on February 26, at the Logan General Hospital.

During the business session, plans were made to entertain the husbands of the Auxiliary members on "Doctor's Day."

The next meeting of the Auxiliary will be held on April 7, at the Aracoma Hotel for the annual election of officers.

MRS. VIRGIL A. DEASON, *Secretary*.

HARRISON COUNTY

The Auxiliary to the Harrison County Medical Society met on March 5, at the Stonewall Jackson Hotel, Clarksburg. Mrs. E. B. Wright, president, presided over the meeting. Eight members were present.

Miss Harriette Drain spoke to the Auxiliary on "The Dr. Frank Lemoyne Hupp Scholarship Fund." Following the program and business session, adjournment was called until the April 2 meeting, when the annual election of officers will be held.

MRS. H. H. ESKER, *Secretary*.

OHIO COUNTY

The Auxiliary to the Ohio County Medical Society met on March 6, at the home of Mrs. John Gilmore. Mrs. Gilmore, president, presided over the meeting which was attended by twenty-eight members.

The meeting was in the nature of a social event, bridge being the main diversion of the evening.

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The next meeting of the Auxiliary will be in April and will be a luncheon at the Wheeling Country Club.

MRS. RUSSELL C. BOND, *Secretary*.

BOOK REVIEWS

INFANT NUTRITION

"Infant Nutrition" was written by Williams McKim Marriott, B. S., M. D., Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis. Publishers are The C. V. Mosby Company, St. Louis, Mo., and the net price of the volume is $4.50. The book contains 431 pages and twenty-seven illustrations.

This is the second edition of Dr. Marriott's book. It is primarily intended as a textbook of infant feeding for students and practitioners of medicine. So numerous have been the theories advanced and so diverse the methods of feeding recommended that the practitioner is likely to become hopelessly bewildered. It is the purpose of this book to summarize present-day knowledge concerning the nutritional requirements of infants under normal and pathological conditions and to indicate the effects of failure to meet any or all of these requirements. As a further aid from the practical standpoint, separate chapters on "Therapeutic Procedures and on Medication in Infancy" have been included. An effort has been made in this book to evaluate present-day knowledge of nutrition on the basis of actual clinical trial, and conclusions have been arrived at not in the laboratory or easy chair, but in the clinic.

THE PARATHYROIDS IN HEALTH AND IN DISEASE

"The Parathyroids in Health and in Disease" was written by David H. Shelling, B.Sc., M. D., of Johns Hopkins University and Hospital, Baltimore, Maryland. Publishers are The C. V. Mosby Company of St. Louis, Mo., and the net price is $5.00. The book contains 319 pages and twenty-six illustrations.

It has been the aim of the author to deal with the various phases of the subject as fully as possible, so that the monograph may appeal to the investigator as well as to the clinician. In so doing, the review may appear, to the respective groups, to fall short of its purpose. Such a deficiency, however, is inherent in all such reviews, and in order to compensate, in part, for this shortcoming, a bibliography

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R. H. Dunn, M. D., F. A. C. S.
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U. G. McClure, M. D.

Obstetrics and Gynecology:
F. A. Clark, M. D.

Eye, Ear, Nose and Throat:
V. E. Holcombe, M. D.

Roentgenology:
V. L. Peterson, M. D.

Internal Medicine:
H. L. Robertson, M. D., F. A. C. P.
William C. Stewart, M. D.

Medicine and Pediatrics:
Hugh G. Thompson, M. D.

Orthopedic Surgery:
Randolph L. Anderson, M. D.

Urology:
Thomas G. Reed, M. D.

General Medicine:
W. O. McMillan, M. D.

Pathology:
M. Gillies, M. D.

Resident Physician:
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• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

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Illustrated Booklet On Request

has been appended at the end of each chapter, so that those who wish to pursue any particular phase of the subject more thoroughly may do so by turning to the original sources of information.

The views expressed in this volume concerning the function of the parathyroids are the outgrowth of the author's experiences in the laboratory and in the clinic. Throughout the volume, an attempt has been made to explain, as far as possible, the normal and abnormal phenomena associated with parathyroid secretion, or lack of secretion, in terms of known laws of physics and chemistry, and to supplement morphological pathology with pathological physiology.

HOW TO PRACTICE MEDICINE

"How to Practice Medicine" was written by Henry W. Kemp, M. D., of New York, and published by the Paul B. Hoeber Company, Inc., New York. It contains 156 pages and is not illustrated.

This work is intended largely for recent graduates, internes and fourth year medical students. It certainly is not intended for any practitioner whose annual income grosses in five figures, though he might possibly derive some benefit from perusing the text. Dr. Kemp's work, in his own words, is a "potpourri of suggestions, ideas and reminiscences of a very active practice." The net price is $2.50.

TEXTBOOK OF SURGERY

"A Textbook of Surgery" has been composed and written by American authors. The editor is Frederick Christopher, B. S., M. D., F. A. C. S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston, Illinois, Hospital. The book contains 1608 pages with 1349 illustrations on 730 figures. The publishers are the W. B. Saunders Company, Philadelphia, and the net price of the book is $10.00.

The editor says of this work: "It is the dominant plan of this textbook to give the student a concise presentation of surgery which is characterized by the maximum authority. The contributors, whose painstaking work has made this book possible have been chosen after careful thought and consultation because of their outstanding ability in the subjects which they present. The subject matter contains the tested and accepted present day principles of

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MEDICAL TREATMENT OF GALL-BLADDER DISEASE

Martin E. Rehfuss, M. D., Clinical Professor of Medicine at Jefferson Medical College, Philadelphia, and Guy M. Nelson, M. D., Instructor of Medicine at Jefferson Medical College, Philadelphia, are the co-authors of "Medical Treatment of Gall-Bladder Disease." Publishers are W. B. Saunders Company, Philadelphia; net price, $5.50. The book contains 465 pages with 113 illustrations.

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THE WEST VIRGINIA MEDICAL JOURNAL

PUBLIC LIBRARY BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII MAY, 1936 No. 5

CARCINOMA OF THE STOMACH*

By John E. Cannaday, M. D., F. A. C. S.
Charleston, W. Va.

Probably cancer in no location in the human body is more readily curable by surgical means than cancer of the stomach in its more usual locations, excepting of course, when it is located in the fundus. It does not spread rapidly and continues definitely localized for some time after its inception.

Cancer of the stomach is the most common deep-seated form of internal cancer occurring in the male. In the female it is more frequent in the uterus and the breast. Twenty to 40 per cent of all cancers involve the stomach and about three per cent of all deaths are due to cancer of the stomach. It is twice as frequent in men as in women, the ages ranging from 40 to 65 years, rarely under 35. The disease is primary and rarely secondary to cancer in other locations. Heredity may predispose; external injuries, alcohol and tuberculosis apparently are not causes.

Approximately seven per cent of stomach cancers develop on a preexisting ulcer base. The part of the stomach adjacent to the pylorus is more frequently affected. The usual growth is a hard, irregular mass, near the pyloric entrance with a tendency to mechanical obstruction. Usually there is a large ulcer on the mucous surface. The growth tends to spread upward along the lesser curvature, or downward from the cardiac end, but it has no tendency to involve the duodenum.

It is interesting to note here that in the latter part of the eighteenth century, Mathew Baillie of Edinburgh, wrote in his work on pathology to the effect that cancer of the stomach was much more common in man and it was thought by some that it was due to drinking alcohol, but that he felt the frequency was due rather to a definite predisposition on the part of the male.

About 75 per cent of cancers of the stomach are scirrhous in type. The remainder belong to the classification of adenocarcinomata.

Symptoms: Early Stage: It is to be borne in mind that there is no definite set of symptoms for cancer of the stomach. A man be-

*Read before the Central West Virginia Medical Society, Webster Springs, July 27, 1935.

tween the ages of 40 and 60 develops digestive symptoms, weakness, progressive loss of weight, and anemia. There is a loss of appetite and feeling of fullness and distress in the stomach, particularly after eating. In the majority of the cases the symptoms are of sudden onset; in comparatively few a history of long standing indigestion is present; in most cases a gastric analysis shows reduction in the acid values; in a few there is excessive hydrochloric and total acidity. A mass may or may not be demonstrated by x-ray examination.

The symptoms may come on gradually or suddenly. When these symptoms come on, if a life is to be saved, prompt action must be taken. The difference between curability and a hopeless condition may be a matter of but a few weeks.

What I believe to be a typical case called in to see me today. An active man, 50 years of age, whose weight three months ago was 186; now weighs 162; has very little appetite; practically everything he eats distresses him; the feeling of distress is relieved for some time by food; he is nauseated each day and vomits occasionally. This case I take it, is in the early stage, or stage of operability.

The following are noteworthy symptoms: A vague indigestion of recent onset and the gradual downhill course of the patient of advanced years. A considerable number of patients have as their first symptom a definite sensation of having an empty stomach one or two hours after eating; a hunger-like distress which is indistinguishable from that of a benign ulcer. This distress is epigastric in situation and very frequently is relieved by the taking of food, milk or alkalies. In other cases the relief obtained from the taking of food is not quite so striking, but the symptoms simulate those of ulcer. As time goes on the distress becomes more marked; relief is more difficult to obtain, and eventually the symptoms of ulcer are replaced by distress immediately after the taking of food as well as later. In some cases, there is a typical history of ulcer, extending over a period of years. In such cases an ulcer could be assumed to be the precursor of the carcinoma. Usually, however, there is a definite change in the symptoms when carcinoma appears. Sometimes there is a history of chronic indigestion of undeterminable character with recent change of symptoms, both in degree and kind, attributable to the development of carcinoma. In some cases there probably are no definite symptoms of indigestion, but the patients gradually lose weight and strength without symptoms pointing directly to the stomach. Some people consider themselves entirely well until there is a sudden evidence of pyloric obstruction or sudden hemorrhage. Severe anemia may be the outstanding sign. In such cases there is danger that a diagnosis of pernicious anemia may be made. In a small number of cases, there are no symptoms until metastasis occurs. Occasionally, in a case of this type, enlargement of the abdomen from ascites may be the first evidence of the underlying gastric malignant growth; in other cases, deep jaundice due to secondary involvement of the biliary ducts appears.

Second Stage; Fully Developed Symptoms: Constant distaste for food, marked loss of weight, copious vomiting at intervals. Blood may be vomited and occult blood is constantly found in stools; progressive emaciation and weakness. A hard mass is usually palpable under the ribs. This is the stage of possible operability.

Third Stage; Terminal Condition: There is no appetite, constant pain and distress in the stomach, vomiting or regurgitation of foul fluid; emaciation; cachexia with lemon-colored skin; marked anemia; enlargement of lymph nodes above the left clavicle; large liver; abdominal ascites; edema of the legs; absence of leucocytosis; presence of Oppler-Boas bacilli; coffee ground vomit. A marked filling defect is shown by x-ray.

Most unfortunately a vast number of cancers of the stomach are overlooked until in either the second or third stage.

Diagnosis: A patient over 40 years of age, with onset of progressive, apparently cause-

less dyspepsia, followed by weakness and loss of weight, should arouse the suspicion of cancer of the stomach.

An ulcer of the greater curvature is usually malignant; ulcer of the lesser curvature is often benign. Progressive increase in gastric symptoms in a patient with an old ulcer of the stomach suggests malignant change. If the x-ray changes do not show marked improvement after ten to fourteen days' treatment for ulcer, or if no good reason for the dyspepsia is found, an exploratory operation should be done, irrespective of the gastric analysis and x-ray findings.

As Eusterman has so well said, "progress in earlier recognition and treatment of this disease has been and continues to be retarded by various factors. The middle-aged layman too frequently continues to procrastinate in seeking competent medical advice for digestive disturbances. The practitioner, also, may disregard the possible gravity of such a disorder, especially when it tends to persist or to recur in spite of ordinary methods of treatment. One serious difficulty is the fact that the disease may be far-advanced before it can be recognized. For these various reasons, the patient is often deprived of the opportunity of a cure or added years of life that could have been accorded him by timely operation."

In regard to stomach lesions, and this notably applies to cancer, x-ray examination offers more than all other methods combined. It must be borne in mind that there is a small percentage of cancer cases that cannot be diagnosed even by x-ray and such, in the face of sufficient evidence, should have the benefit of an exploratory operation.

Progress: The only practical hope for cancer of the stomach lies in early partial gastrectomy. This operation, in favorable cases, gives freedom of recurrence up to five years in 30 per cent of the operable cases with a primary mortality of two to 10 per cent, according to the skill of the surgeon and care exercised in the selection of cases. Unfortunately, less than three per cent of cancers of the stomach undergo radical operation. In the second stage an exploratory operation should be made to determine the feasibility or desirability of a palliative operation. Operative removal is the only treatment that offers any hope for relief, benefit or recovery.

The palliative operation even after metastasis has taken place often gives the patient comfort and ability to carry on his usual vocation for a year or two longer. Occasionally, patients have made complete recoveries following partial gastrectomy, even though at the time the operation was performed, scattered metastases in the abdomen were noted.

A few typical case reports are appended:

J. M., Case No. 38822-39454, white male, age 51, admitted to the Charleston General Hospital, December 11, 1933, complaining of pain in the epigastrium, loss of weight, nausea and vomiting.

Examination revealed a markedly anemic, emaciated patient. Blood count: 3,700,000 red cells with 70 per cent hemoglobin. Gastric analysis showed the absence of free HCl. at all times, a moderate amount of lactic acid and a number of Boas-Oppler bacilli.

X-ray examination of the stomach showed an irregular filling defect involving a large area. A diagnosis of carcinoma of the stomach was made and the patient operated upon December 19, 1933, at which time about 50 per cent of the stomach was resected. A blood transfusion was given immediately following the operation. Pathological diagnosis: Scirrhous carcinoma.

The patient made a very satisfactory postoperative convalescence and at the time of discharge, January 6, 1934, had no particular complaint.

Returned for observation, February 19, 1934, at which time the gastric analysis showed free HCl. negative, total acidity, 29. X-ray report: "Examination of the stomach after the barium meal shows absence of a large portion of the lower part of the stomach with free emptying of the barium through the artificial opening. There is a rather large filling defect on the greater curvature, high up, which may be an extension of the old lesion. There is a small residue in the stomach at six hours."

At the time of the recheck it was noted that the patient showed marked improvement and was in a state of reasonably fair health. He stated that by being careful about his diet he got along very well. His family physician reported later by letter as fol-

lows: "He ran a rather smooth course considering the metastases which had already occurred, having few and minor symptoms referable to the stomach, the distress and pain were relieved when necessary with anodynes other than morphine until the last month of his illness when jaundice began to deepen and from that time on he gradually drifted into a coma and died on July 19, 1934."

If this case had been operated on six months to a year earlier, a permanent cure would have been likely.

J. R. H., colored male, age 50, was admitted to the Charleston General Hospital, April 20, 1935, complaining of stomach trouble.

History: Had not had any trouble with his stomach prior to six months before admission, but about that time began to complain of indigestion of a mild nature. Three months ago he began to have pain, dull and aching in character and during these three months has vomited almost daily. The past history is essentially negative.

The physical examination was essentially negative except for a large palpable mass felt in the upper abdomen, fairly well fixed.

Laboratory: Blood count, 4,000,000 red cells; hemoglobin, 84; leucocytes, 7,500. Blood Wassermann and Kahn, negative.

X-ray Report: "Scirrhous carcinoma, involving the distal third of the stomach. Marked obstruction. The lesion is operable."

Operation, April 23, 1935, under nitrous oxide-ether anesthesia.

Findings: A massive carcinoma of the pyloric region of the stomach, extending some distance up on the main body of the stomach. Numerous large glands, also a metastasis on the under surface of the liver, approximately two and one-half inches long by three-fourths of an inch wide.

A resection of the Billroth-Polya type was used with removal of the pylorus and approximately one-half of the stomach. The carcinomatous mass was densely adherent to the upper surface of the pancreas and a rather considerable area of mesentery of the transverse colon had to be removed along with the stomach. The growth had so encroached on the duodenum that after resection it was impossible to make a satisfactory closure of the cut end of the bowel.

The patient did fairly well for a time following the operation, but about the tenth postoperative day he developed a duodenal fistula which did not respond well to treatment, and death ensued on May 24, 1935.

This man knew four months before operation that he had cancer of the stomach yet he waited until there was only hope of palliation by surgery.

F. L., Case No. 37488-45811, white male, age 35, admitted to the Charleston General Hospital, August 3, 1933, complaining of vomiting nearly everything he eats. States that for the past three years he has had indigestion; about six weeks ago began vomiting; sometimes vomits after each meal and sometimes goes all day, then vomits up everything. Has seen some blood in the vomitus on two occasions; has not noticed any blood in the feces. Has not had much pain but is markedly nauseated for half an hour before vomiting; is always hungry; bowels regular. For the past three days has had a sore spot over the pyloric region at times. Has lost 25 pounds of weight in the past six weeks.

Blood pressure, 100/40; temperature, 99; pulse, 80; respirations, 24. Blood count: 4,500,000 red cells; hemoglobin, 75 per cent.

A diagnosis of cancer of the stomach was made and the patient operated upon August 5, 1933, with findings of a large tumor mass in the lesser curvature of the stomach, about two and one-half inches across, apparently limited to the stomach. The lymphatic glands immediately adjacent to the stomach tumor were enlarged. Most of these glands together with about two-thirds of the stomach were resected and an end-to-side anastomosis was made between the distal end of the stomach and the jejunum. The pathological diagnosis of the tissue removed was scirrhous carcinoma.

About a week after the operation a duodenal fistula developed at the lower end of the incision. This was treated by aspiration and suction and closed inside of a week, reopened three times before it closed permanently. The patient left the hospital on the twenty-eighth postoperative day, improved. The prognosis in this case was considered poor.

He returned for a check-up February 20, 1934, approximately five months after the operation, at which time he stated that he had gained thirty pounds weight and was working every day. The x-ray at that time was reported as follows: "Examination of the stomach with the barium meal shows amputation of a portion of the lower end of the stomach, with the new opening functioning well and no evidence of any new involvement. The

opening is not very large, but apparently emptying at a normal rate."

The patient was readmitted to the hospital July 2, 1935, eighteen months later, complaining of loss of weight and strength, regurgitation and vomiting of food, sometimes vomiting after each meal, but at times going two to three days without vomiting.

Examination: Patient is rather anemic, the skin is dry and shows abnormal yellowish pigmented macules of various sizes, slightly scaly, present in both axillary and supraclavicular regions, bends of elbows and over the epigastrium. There is an enlarged gland just above the left scapula in the posterior triangle, about the size of a small walnut. It is firm, hard, not tender, and is not attached to the skin. The chest is markedly flattened, emaciated and the ribs very prominent. The abdomen is flat, soft and tympanitic except for the presence of a mass in the midepigastric region, which is hard, immovable and tender upon palpation.

X-ray report, June 30, 1935: "Partial gastrectomy. There is an induration about the gastric stoma; recurrent carcinoma. There is beginning obstruction."

Under ether anesthesia, the patient was operated on July 5, 1935, at which time the entire epigastric region was found to be filled by a massive inoperable mass. A small nodule was resected for diagnosis which was reported by the pathologist as grade III carcinoma. Owing to the multiplicity of the adhesions present it was not necessary to open the general peritoneal cavity and for this reason it was possible to make the exploratory operation relatively extraperitoneal. The stomach was opened in the anterior normal area and explored. The outlet was apparently still large enough to function.

The patient left the hospital on the fourteenth postoperative day. He died two weeks after returning home.

In spite of the presence of metastatic glands this man was so restored by operation that he was able to live the life of a useful citizen and breadwinner for nearly two years.

R. K., Case No. 45930, white male, age 27, admitted to the Charleston General Hospital, July 9, 1935, complaining of pain in the stomach.

History: The patient states that for the past five or six years he has had an acid stomach, takes anacid powders, etc.; had sharp pains in the epigastic region which were relieved by taking food. The condition grew progressively worse and about nine months ago he had a hemorrhage, following which he was taken to a hospital where the diagnosis of duodenal ulcer was made. He remained for 15 days in the hospital under treatment, returned to his home and got along well until about two weeks ago when he again started having pain. The pain has grown much worse and for the past three days it is not relieved by food or medication. Has not vomited but the stomach seems to be filled with gas. The patient does not know whether he has lost weight or not.

Examination: The patient is well developed and nourished. The general physical findings are essentially negative except a mild rigidity and spasm over the epigastric region with tenderness to deep palpation over the upper abdomen.

Laboratory: Gastric analysis — free HCl. 45; total acidity, 70. Blood count: Red cells, 5,250,000; hemoglobin, 90 per cent. Kline and Wassermann, negative.

X-ray Report: "Ulcerating carcinoma on the greater curvature, involving the pyloric end of the stomach."

Operation, July 16, 1935. Findings: A very large ulcer, greater curvature of the stomach which caused a great deal of deformity, and was covered with adherent omentum. A Billroth-Polya type of operation was performed, resecting the pylorus and lower third of the stomach.

The pathologist's report is as follows: (1) Acute and chronic gastric ulcer (greater curvature); (2) carcinoma, probably grade IV, arising from the glandular epithelium.

In spite of the youth of this patient his prognosis was considered hopeful for a permanent cure. The patient made a fairly uneventful recovery and left the hospital on the fourteenth postoperative day, feeling stronger and able to take nourishment well, and entirely free from gastric discomfort. This patient will in all probability receive a permanent cure.

J. H. C., Case No. 28584, white male, age 71, was admitted to the hospital September 15, 1930. Chief complaint—vomiting and loss of weight. Stated that he felt perfectly well until 12 months ago. The onset was gradual with occasional indigestion and vomiting and for the last six months has had to restrict his diet to liquids; vomiting every two or three days, the vomited material containing food taken several days before. His appetite is fair and he would eat more if he knew he would not

vomit later. Is constipated and requires enemas. Has never noticed any blood in the vomitus; has occasional cramps in the right upper abdominal quadrant.

Examination showed a rather emaciated patient, skin dry; weight, 108; blood pressure, 118/78. General physical examination otherwise essentially negative.

Laboratory: Blood count—red cells, 5,000,000; hemoglobin, 80 per cent; leucocytes, 9,000; polys, 74.

The x-ray conclusions were that at the sixth hour, fully 90 per cent of the barium meal was retained in the stomach.

A diagnosis of carcinoma of the stomach was made and the patient operated on September 17, 1930, with findings of carcinoma of the pylorus with the tumor mass about three inches in diameter. A gastroenterostomy was done, and the patient left the hospital on the sixteenth postoperative day, apparently very much improved. No biopsy was made. I am advised that this patient lived for about 18 months or two years, and died of some other condition.

Summary: The cardinal principles of the subject of cancer of the stomach consist in the main of early investigation by x-ray and otherwise following even seemingly trivial stomach symptoms; prompt surgical exploration after x-ray diagnosis; surgical exploration in spite of negative x-ray findings if stomach symptoms persist and cannot be based on some other form of pathology.

OUR MEDICAL PROFESSION*

By DELIVAN A. MACGREGOR, M. D.
Wheeling, W. Va.

SPEAKING of our medical profession, I am reminded of an old Scottish toast: "Here's to our noble selves! There are few like us!"

We have a code of ethics as old as the Hippocratic oath.

It is a self-sacrificing profession, composed of a group of idealists, dedicating their lives to the health, comfort and longevity of their fellow men.

All over the world the general practitioner is called upon for help and comfort in the hour of illness and sorrow. As comforter of the afflicted, the family doctor often stands in closer sympathetic relationship with the patient and his family than their spiritual advisor.

The family doctor is often called upon for advice in personal and family affairs. He exercises a tremendous influence over the lives of his patients, not only through direct suggestion but also by virtue of his example. Unfortunately that influence is usually limited to personal or professional affairs.

If he chose to do so, he could extend that influence to include political and economic questions. Most physicians consider it beneath the dignity of their profession to engage strenuously in political contests or arguments. There are times and issues which amply justify his active participation in political problems. Right now our country is passing through such a period and facing such issues.

The first problem is to get the doctors to agree among themselves on any particular subject. It is most unlikely that there would ever be a one hundred per cent agreement. They are like the Democratic party — they love to argue among themselves. However, a determined minority, say 25 per cent of any county society, if they are firmly convinced of the necessity for concerted action on a vital issue, could wield such a powerful influence in any community that they would be able to accomplish almost any object which they deemed worthy of their efforts.

One influential citizen with a firm conviction and an enthusiastic determination to press

*Read before the joint meeting of the Brooke and Hancock County Medical Societies at Weirton, W. Va., February 29, 1936.

the issue may be able to influence a whole community to endorse his project. If one-half or even one-fourth of all of the physicians in a community agree upon a certain project and press it vigorously, there is little doubt about the outcome. The real difficulty lies in getting the doctors to coöperate in this enthusiastic manner. Why?

In the first place, we must overcome inertia —laziness. Doctors are too busy with their professional work to devote much time to extra-professional affairs—even though they are proper and very desirable. We do not mind taking an afternoon for golf, or an evening for bridge or poker, but it comes pretty hard to deliberately set aside any time for political work. Of course, the answer is simple. If any doctor is determined to use his influence and spread a certain gospel, he can do it while he works and while he plays. It can be brought into the social chat with his not-so-sick patient and the family, and he has countless other opportunities at the club dinner, on the golf links, over the card table, or wherever he may spend some leisure time. If he has the determination to spread the gospel, it can be done.

Why is the average doctor uncoöperative—or rather unenthusiastic? Perhaps one reason is the lack of strong leadership and each doctor's feeling of individualism. We adhere superficially to the letter of our code of ethics, and at the same time nearly every one of us is just a little jealous, a little envious, even a little suspicious, of all the rest of us. As soon as any one physician rises above the level of his contemporaries, there are a dozen envious rivals who openly or covertly, seek to undermine his influence and disparage the quality of his work. We physicians seem to have the idea that the best way to climb to the pinnacle of success is to place a foot on the head of the nearest competitor and push firmly downward. Of course, this is the most nearsighted policy imaginable and by following it we depreciate our whole profession in the eyes of an observant public.

Patients are always on the alert to learn what one physician thinks of another's work. We should never make the mistake of thinking that unfavorable comment on another man's work will enhance our own prestige. Usually it serves to decrease the patient's confidence in and respect for the whole profession. Speaking for myself, I confess that it took me a long time to learn this lesson. Even after twenty years of painful experience, I sometimes have an urge to tell a patient that it appears that his tonsils were gouged out with a potato peeler, or that his operation for chronic appendicitis probably was unnecessary. How quickly the patient or his friends take the story back to the first doctor! Even if you do not actually criticize the previous work, your remarks may be distorted by the patient, who really does not understand half you say anyway, and a very unpleasant version may reach your colleague's ears. I think it is a good plan to search out something very favorable to say, if that is possible, and say it emphatically so that there may be no hint of criticism. If one compliments the patient's former physician, the patient is usually gratified because he feels that he made a wise choice in the first instance.

Of course physicians are strictly human, and that being the case, we may expect jealousy, argument and personal animosity to be manifested occasionally in our relations with each other. It seems to me that there has been a remarkable improvement in professional relations during my short span of practice. Thirty or forty years ago it was not uncommon for one physician to express publicly the most violent hatred for another. On more than one occasion one of the leaders in the medical profession in my home town went "gunning" for another equally famous son of Aesculapius. It seems to me that now there is much less bickering; much less violent feeling and much more toleration and mutual understanding than ever before in the history of our profession.

It is very fortunate that this improved relationship has come about. We are face to face with many new problems which vitally

affect the future of our profession. We should meet these problems with a united front, but as yet our craft organization is the loosest and least efficient association conceivable. It would not be feasible for physicians to organize and seek their objectives in the manner of a trade union, but we could learn many valuable lessons from such unions.

The individual county societies should be more vigilant both in the prosecution of fakers and unlicensed practitioners, and also in requiring their own members to adhere strictly to the local fee schedule, and to abandon any form of practice, contract or otherwise, which upon investigation is found to lower the quality of medical service or to offer unfair competition to other physicians in that vicinity. The county medical societies are the essential units of the state and national associations. If they are weakly organized and inefficiently operated, the whole superstructure is relatively impotent.

We are assembled here tonight in the Panhandle of West Virginia between the commonwealths of Ohio and Pennsylvania. Well may we be proud of the state medical associations of these three states. They are all wide awake organizations alert to protect the interests of the practicing physicians in the component societies of the three states. They are also the liasion agents between the American Medical Association and our individual county societies. The machinery of our medical organization is set up and idling smoothly. When the test comes, when our profession is directly confronted by a problem of vital importance, will it be able to take up the load and carry on to a successful issue? That depends upon one thing—the loyalty, the earnestness, the solidarity of the component county medical societies.

Of course you all know what I mean when I refer to a problem of vital importance for the medical profession. It is now eight years since the Committee on the Cost of Medical Care began its work. After five years of investigation and the expenditure of $750,000, its report was made public. Since that time many experiments in the socialization of medicine in various cities and counties have been undertaken. To date, no one experiment has encountered such signal success as to warrant its acceptance as a model for the rest of the country to adopt.

The turn of the political wheel has placed in the White House a socialistically-inclined president. A social security program for the nation has been inaugurated. It embraces old age pensions and unemployment insurance.

For some time, it appeared that a national system of social medicine would be included in the plan. Largely through the influence of the American Medical Association, this medical plan was held in abeyance. It will be brought up again. In my opinion some form of social medicine will be adopted by our lawmakers eventually. We all recognize its desirability for the indigent and the low wage earners, but when that law is written we hope that it will be written by medical men in the light of their experience with the different plans that are now on trial in various parts of the country.

Under our present system, physicians have been called upon to render medical service to the indigent and near-indigent with little or no compensation except the thanks of the public when somebody happened to think of it. This is not right. The medical care of the indigent should be a charge upon the whole community just as in the case of food, clothing or shelter.

At the same time, we all recognize the fact that to regiment the whole population into a system of state medicine would result in a deterioration of the high standards of medical service of which we are justly proud. We physicians know that the quality of medical service would suffer sadly if all doctors were placed on contract to care for a specified list of patients. We know that in order to secure a larger income, a physician would be tempted to undertake to care for a larger list of patients than his time or ability would permit. We know that every patient should have the privilege of selecting his own physician, and

that this personal selection is the basis on which is built that finest of all professional relations—the intimate relation of the patient with his family doctor.

Recognizing the imperfections of our present system, but realizing the folly of embarking upon a nation-wide plan for state medicine which would tend to destroy the physician's initiative as well as his conscience and deprive the patient of the best that medicine has to offer, I believe that through our representatives in the American Medical Association we are in a position to give our lawmakers advice which may prevent rash and ill-considered legislation along this line.

We have been criticized because we do not have a complete new plan ready to recommend to the public. We adhere to the old forms and object to the suggestions for radical changes. As a matter of fact, we have done pretty well under the old system. No profession in the world can point to greater accomplishments than the medical profession. The great majority of patients will testify that they have received the best of medical service. The old system is not so bad as many parlor socialists would have us believe. As a matter of fact, there have been very few important improvements on the Christian religion since the time of Christ. Perhaps that little matter had better be referred to a committee of the intelligentsia for recommendations.

I think it is a good thing for physicians to get together frequently in social session as we physicians of the West Virginia Panhandle and adjoining counties are doing tonight. It gives us an opportunity to know each other better, and to discuss such subjects as the one I have brought before you tonight. Our aims, our ambitions and our ideals are all similar. We should be working shoulder to shoulder toward a common goal. If ill-advised legislation threatens our profession, we should all be eager to do our part to forestall it. If we work in harmony and make proper use of the political influence at our command, our county medical societies in coöperation with the county medical societies of other states, can preserve for our profession and our patients that vital part of the practice of medicine which is in danger of being destroyed.

HUMAN CHARACTER

The most interesting subject in the world to any normal person is—himself. Egoism is natural, normal and essential, declares Dr. Roscoe Spencer in "The Most Interesting Subject in the World" in the April *Hygeia*. This self centered interest or egocentricity we are prone to condemn has a sound biologic foundation. It is an outgrowth of the instinct of self preservation, the first law of nature.

Since self cultivation or self interest is a form of self preservation it becomes part and parcel of one of the three primitive instinctive biologic urges. Hunger, the sex urge and self preservation are the basic drives on which human character is built.

It is a psychologic law that the person who continually talks about himself and tries to impress others with his superior qualities does so in order to hide his inferior qualities. Yet it must be recognized that social approbation and the personal satisfaction which follows achievement of any kind are as necessary to mental health and the development of character as good food is to bodily health.

Health is not so much a gift as an achievement, the result of a struggle between two living variables. A good personality or character is likewise the result of struggle and growth and is ever a successful process of adjustment. Nothing polishes off the rough edges of personality as much as social contacts. A person who is socially adjusted without doubt possesses the highest degree of mental health.

The criterion of a healthy mind is mental honesty, or the ability to face and accept the unpleasant as well as pleasant realities of the world in which we live.

The social instinct of man or the consideration of the other fellow is not a sign of weakness as the rugged individualists and the hero worshipers would have us believe. That our early egoism must normally develop into altruism is indicated by a clear sign which nature herself gives us. That sign is the genuine joy and lasting happiness which come only from what we do that is of value to others.

PSYCHOSES WITH SOMATIC DISEASE*

By EDWARD F. REASER, M. D.
Huntington, W. Va.

ALTHOUGH there has been great progress in the conception and treatment of psychiatric problems in the past three or four decades, yet in the main we still stand in psychiatry where the medical profession stood several generations ago when the physician made his diagnosis by saying that his patient had a fever. Unaware of the micro-organisms proliferating within the blood and tissues of the patient, the physician could only designate the nature of the disease by describing symptoms.

In many respects we are doing the same thing in our psychiatric diagnoses. To determine the true etiology of a mental disorder can seldom be accomplished in the light of present knowledge. There are many men and women who live to a ripe old age, active and alert, asserting leadership and initiative, who remain free from any evidence of mental impairment, while others at a much earlier age develop symptoms of senility or of cerebral vascular disease.

One conception, however, which we have learned to maintain, and which I desire again to emphasize, is the conception of the integration of the human organism as a whole. We are not justified in regarding a man as an architecture of tissues on the one hand (the soma) and as an ethereal being (the psyche) on the other. We are obliged to carry our conception of the human animal as a biological unit which presents various somatic and psychic aspects depending upon the level upon which inspection may be made. When a patient presents himself complaining of a headache, or of pain in the eyes, or of gastric or cardiac distress, we are justified in searching for a cause upon a somatic level, and in most cases we prescribe an analgesic drug, depending upon the laws of nature to come to his rescue and to correct his biologic processes. We are aware that the laws present in health obtain in disease. The same laws of biology, chemistry, physics, and physiology that operate when the man is in a state of physical health, operate when physical disease is present, the results being different because the conditions are different. In the same manner we find that psychological laws continue to operate in the presence of mental illness.

I would have you conceive of the structure of the mind as composed of the conscious and the unconscious. In the unconscious we find all the inherited patterns of action, the instincts that have to do with the preservation of self and of the race. We also find here the inherited patterns of thought that have come down to us from innumberable ancestors, modified as time passed and conditions changed. These two sets of patterns make up the racial, or collective, unconscious. Added to that we have personal experiences beginning immediately after birth and continuing on through life.

All of these instincts and experiences are surcharged with emotional energy. As the child develops and attains an understanding of the requirements of the cultural level of the civilization in which he lives, his herd instinct, which calls for the approval of his fellows, asserts itself, and he notes that certain thoughts and actions instinctively urged are not socially acceptable. Therefore he represses them into the unconscious. These repressed experiences compose the personal unconscious and together with the racial unconscious make up that battlefield of emotionally driven groups, or sets of ideas, known as complexes, that are constantly striving for expression. Childhood teachings, repressions,

*Read before the Cabell County Medical Society at Huntington on January 9, 1936.

forgotten past experiences, unconscious desires, are all important in determining opinions, behavior and activities of individuals. After acting in response to these compelling forces we formulate in our own minds reasons that we believe determined our conduct. We deceive ourselves with our rationalizations and protect our ego-ideals against offense. If carried to a pathological extent this process of rationalization becomes the basis for the formation of delusions and oftentimes of paranoid projections.

The keynote of all biological sciences is adaptation and in psychiatry we are always dealing with adaptation. As we in medicine understand the constitution, we regard it as an integration made up of a biological unit that is the product of heredity plus the effect of experiences. The influence of disease diatheses, cosmic elements, sub-human environment, and human environment, traditions of life and family, identifications made to parents and to other people, all enter into the determination of the reactive rôle of the individual. There is no summation in biology. We must deal with individual factors. The psychological growth of the person is deviated by fixations for which compensations must be made.

Thus we are dealing with the constitution plus fixation points and imbalances are always present and occurring. There is a constant tendency to swing to the balance—that is to compensate—but something is always needed. In the presence of bacterial invasion the body does this by proliferating into the blood stream such antagonistic agents as agglutinins, lysins, and other antitoxins. All people have a set of cravings, sex power, possession, protection, friendships, love objects, etc., that must be satisfied, at least in part. In the absence of sufficient satisfaction some compensatory reaction will occur. This may assume the nature of a neurosis or a psychosis. One school regards the neurosis and the psychosis as different degrees of the same type of adaptive reaction while the other school regards them as totally different. There are exceptions to the arguments advanced by each and it is conceivable that both are partly right because they are viewing different sets of facts.

In the light of existing knowledge, which has been obtained from the contributing sciences, the physician is prepared more readily to demonstrate the reactions of the soma to invasive forces than he is to discover the adaptations of the psyche to the influences that surround and impinge upon it constantly, such as pain and pleasure, love and hatred, deprivation, bereavement and distress. While I do not hold with some of my former colleagues and preceptors, that purely psychic influences can and do cause actual cellular changes, such for instance, as organic heart disease, I am convinced of the inseparable relationships of somatic and psychic factors in syndromes of all types. Therefore our arbitrary separation of organic and psychogenic psychoses, made merely for convenience in the classification of mental disorders, has come to be regarded as a misnomer and misleading by its implications. Therefore, as I approach a discussion of some of the more prominent somatic diseases with which psychoses are often associated, I am led to regard the psychosis in many instances as the outcome of an underlying neural weakness and the somatic disease as the precipitating factor.

The official classification of mental diseases accords a separate and individual place to a number of the psychoses associated with somatic diseases because of the frequency with which they are encountered and the importance they assume. Most of the somatic entities to be mentioned in this discussion, however, would be included in the official classification No. 12, Phychosis with Other Somatic Diseases. Exceptions to this will include the senile and arteriosclerotic groups, brain and nervous diseases and pellagra. Space will not permit any discussion of the luetic groups. I shall attempt to arrange the psychoses chosen for discussion in groups in which the somatic diseases are as nearly related as possible, with one miscellaneous grouping.

(a) *Psychoses Associated With Infective Processes:* Encephalitis occurring in the course of other diseases due to virus or bacterial infection, such as measles, scarlet fever, whooping cough, and perhaps others, is capable of producing the chronic stage which we are accustomed to call encephalitis lethargica. Actually the lethargic encephalitis of von Economo is the entity which occurred as a pandemic following the world-wide scourge of influenza (the hemorrhagic pneumonitis of World War days) and popularly called in America "sleeping sickness." The cause of this entity which we now know as epidemic encephalitis is unknown and space does not permit a discussion of the theories. The pathology of these forms of chronic encephalitis is not distinctive. The parts of the brain most constantly attacked are the basal ganglia and the mid-brain, especially the oculomotor nuclei and substantia nigra. Perhaps the most characteristic feature of this disease is that it is the most dissociated and disseminated of all acute diseases of the nervous system. After the early symptmos of lethargy, diplopia, ophthalmoplegia, and cranial nerve palsy, we are likely to see the onset of cervical rigidity and in some cases a positive Kernig sign. Catatonia is occasionally seen. Insomnia is most often present, although the patient will have the appearance of sleeping. The disease assumes the chronic form, which it often does without much evidence of an acute stage, as a result of progressive and slow changes.

Not all victims of encephalitis lethargica develop symptoms of a definite psychosis. Apparently this is a condition which can exist in varying degrees of severity. Many of these cases will respond favorably to the stramonium treatment or to the more recent atropine treatment. However, in the more marked cases where we see marked reflex changes, with monoplegia or hemiplegia, oculogyric crises, seborrhea of the face, speech changes, and other neurological signs we expect to see mental symptoms.

The mental symptoms usually consist of impulsive actions, impairment of judgment, memory loss, insomnia, excitability, sexual perversions, and in many cases delusions and hallucinations. The advanced stages can best be treated with hyoscine hydrobromide in large doses. They will often tolerate as much as one twenty-fifth of hyoscine daily. This is the best means of controlling the oculogyric crises. In the early stages there is a pleocytosis ranging from 10 to 50 cells and an increase in globulin and sugar. Sometimes there is a mid-zone rise in the gold curve. These tend to return to normal as the disease advances. The most common sequela is the Parkinsonian syndrome. The pupils will often resemble those seen in dementia paralytica.

Chorea is a symptom but in the entity usually designated as Sydenham's chorea it is the essential syndrome. It is supposed that encephalitis of the epidemic type stands in some relation to this entity but the relationship has never been explained. We know, of course, that Sydenham's chorea is definitely related to septic tonsils, rheumatic fever, and endocarditis. Chorea may occur in pregnancy, usually in primipara, and more rarely in the puerperium.

It is essentially a disease of early life. It begins very gradually, as a rule. Involuntary movements will begin in a limb and go on to more generalized jerkings, twitchings, and athetotic movements. The deep reflexes are generally diminished and there is a variation in tonus, often with a pendulous knee jerk indicative of a cerebellar component. The most common pathological findings are minute hemorrhages and emboli in the capillaries more marked in the lentiform area. The spinal fluid is usually normal, but may show a mild pleocytosis. In cases in which the temperature runs high the prognosis is poor for life but in milder cases properly treated recovery is the rule. It is in adults especially where frank psychotic symptoms appear. These generally consist of depression, emotional instability, memory loss, and often hallucinations, delirium and even mania. The reaction is of the toxic-infectious type. Hospitalization is advisable in all cases.

There are a few diseases in which mental symptoms may appear suddenly. In typhoid fever it is not uncommon to note delirium and the patient will be far away and engaging in various pursuits. He may express fear and paranoidal reactions. The room may be filled with objectionable creatures and the nursing problem may be greatly exaggerated by the sudden onset of the delirious toxic-infectious type of mental reactions.

Occasionally you may encounter a sudden onset of psychotic manifestations in cardiac patients. Sudden dementia may develop, marked usually by paranoidal reactions, with ideas of reference, or fear of harm. These patients may go for their guns to drive out their enemies, and in the state of mental confusion they are unable to distinguish between their friends and their imaginary enemies.

Cardiac psychoses usually appear in persons of advanced age but may appear in rheumatic heart disease and in other types of cardiac disorder occurring in early life. When present, the most usual symptoms are suspicions, ideas of reference and a feeling that persons are trying to do them harm.

In liver disease, especially where there is an excess of bile in the blood, sudden and unexpected psychotic symptoms may appear. These symptoms will be of the toxic type and consist mainly of delirium, mental confusion, misinterpretation of the environment and memory disturbances. In pneumonia, septicemia and similar toxic states we have all seen delirious manifestations and have noted their disappearance with improvement in the physical state of the patient.

Cotton was one of the first and most influential psychiatrists to place primary emphasis upon septic foci as etiological facts in mental disease and to emphasize the so-called toxic psychosis. This term is not permissable by one who follows the accepted classification of nomenclature. We are expected to be more specific and to state where the pathological condition lies. You are not content to say that there is an infective process going on in the lungs, but instead you prefer to record that the upper right lobe shows consolidation or that there is a tubercular catarrhal inflammatory state in the left apex. It is very important that each patient referred because of mental symptoms be given a most thorough physical examination, including laboratory work, radiological studies as indicated, and dental care. I have seen patients who were apparently suffering from dementia praecox recover completely when impacted teeth were removed and others who presented a variety of symptoms indicative of manic or catatonic excitement become apparently well after removal of septic foci. Colitis, pyelitis and other physical disorders are often the precipitating factors of psychoses.

Blood Disorders: In the blood dyscrasias there are varying changes in the brain and spinal cord. In pernicious anemia the changes are well marked in the spinal cord where there is a posterolateral sclerosis. The lesions, mostly in the white matter, are purely degenerative in character. In the brain the lesions of pernicious anemia are non-specific. There may be mild diffuse degenerative processes in the ganglion cells and vascular changes. Freeman states, "In a few cases, usually associated with psychoses, characteristic areas of myelin destruction with vacuolization, fat release, and gliosis are present. These occur in the subcortical white matter, principally about vessels, but not necessarily so, and are accompanied by considerable collections of phagocytic microglia." Mental symptoms will occur at one time or another in the course of pernicious anemia in about four per cent of the cases. Sometimes the mental symptoms may appear before anemia is observed, and are such as we may expect in a severe toxemia, such as inertia, fatigability, apathy or mild depression, anxiety and fear. As the disease advances we may note episodic phenomena, delirious states, and often paranoid ideas with projections, irritability, and suspicions.

Polycythemia vera presents an interesting picture to the neuropsychiatrist. The disease is rather rare and the etiology is unknown.

There is an increase in the quantity of active red bone marrow and hyperplasia of the pulp of the spleen with engorgement of the vessels. The percentage of hemoglobin runs between 125 and 150 and the red cell count may run to 11,000,000 with marked achromia of the individual corpuscles. The face and skin present a red cyanotic appearance. The diagnosis is made by the blood picture. The neurologic signs result from impairment of parts of the central nervous system from spontaneous hemorrhages and thromboses. They vary in different cases. Paralyses are usually noted some time during the course of the disease, which is a chronic one and seldom terminates in death in less than four years after the onset of symptoms. The mental symptoms include disorientation, confusion, aphasia of the motor type, emotional instability, sometimes with pathologic crying, and occasionally hallucinatory states. The essential pathology is overdevelopment of both arteries and veins, with frequent softening. Hemorrhages and thromboses occur.

Endocrine Dysplasias: Hypoinsulinism is due to changes in the cells of the Isles of Langerhans resulting in a deficient amount of insulin and consequent derangement of the sugar metabolism of the body, with increased blood sugar and diabetes. I have not seen a case of hypoinsulinism that I could conclude to be the cause of a psychosis, although I have treated a number of psychotic patients who suffered from this condition. However, the presence of diabetes makes the use of insulin necessary in many cases and it is not infrequent for patients who use insulin to present frank nervous and mental symptoms, most marked among which are periodic episodes of confusion, screaming, threshing about, and even fighting. After the episode is over and the mental confusion has cleared up, the patient will not remember what happened. The question might be raised as to whether this is a manifestation of insulin shock. It is not a hypoglycemic shock as the blood sugar content is not reduced below a high level. Hysteroid features may enter into these cases.

On the other hand hyperinsulinism is most frequently marked by convulsive seizures. The condition of hyperinsulinism is regarded as being most frequently associated with a malignancy of the pancreas. There are, however, apparently exceptions to this. I have in mind a white female, aged 38 years, admitted to the hospital with a history of repeated convulsive seizures following the extraction of an impacted tooth. There was an alcoholic history and the patient had failed to follow the advice of her physician. She presented no physical or neurological signs and no definite psychotic trends. The blood sugar was found to be as low as 50 mg. and the blood calcium was normal. The sugar rose under treatment to 94.37 and the patient was discharged, having been free from convulsions after treatment was instituted. I have no record of psychotic symptoms associated with hyperinsulinism. However, when convulsions are encountered in cases of dementia praecox we usually find a low blood sugar.

Disease of the thyroid gland can express itself either as increased or decreased function. The relation of thyroid hyperfunction to mental disorder can not be explained simply, since it may be the cause or the effect. There is a school of medical thought that explains toxic goitre upon the basis of a neurosis. In the light of the geographical distribution of the disease this is difficult to substantiate. There are also pathological changes in the gland itself. Henderson and Gillespie speak of four principal types of syndrome as enumerated by Falta:

(1) A sense of unreality, irritability, and vague persecutory delusional ideas, as seen in some early cases of hyperfunction;

(2) Emotional instability with rapid changes of mood from depression with irritability and suspicion to euphoria and gaiety, rapidity of speech and thought, terrifying dreams, and pathologic laughing and crying. These are seen in well developed cases;

(3) Delirium of the acute organic type, often followed by coma, as may occur in the terminal stages of acute thyroid intoxication;

(4) True psychoses with various symptoms, including excitement and depression, hallucinatory, and delusional states, but probably based upon a previous tendency toward psychosis.

The cases of psychosis associated with hyperthyroid intoxication that have come within my experience have tended toward the manic excited type, colored with suspicions, wild excitement, and over-activity. Such patients must be hospitalized for their protection and it is usually impossible to administer medication orally. Good results may follow rectal administration of iodine, and surgery. A colored female, age 32 years, given the diagnosis of dementia praecox when first seen, was found to be suffering from exophthalmic goitre after a short period in the medical service. She was greatly excited, uncoöperative, delusional, and combative. Lugol's solution was ordered after tube feeding was deemed inadvisable. The solution was given per enema. In three or four days the patient became quiet, talked with the nurses, and consented to accept medication by mouth. After treatment with Lugol's solution until the surgeon regarded her as suitable for operation, a thyroidectomy was done after which she made an uneventful recovery, both from the thyroid disease and the psychosis. When discharged from the hospital within a few weeks she appeared normal in all respects.

Hypofunction of the thyroid leads to myxedema, with loss of sex power, retardation of thought, slow monotonous speech, bradycardia, somnolence, loss of interest in ordinary affairs, and global reduction in intellect. Changes occur in the secondary sexual markings and fatty padding increases. The psychotic manifestations most frequently seen are said to be of depressive types. Hallucinations are likely to be present in about 15 per cent of the cases where the myxedema is well developed.

In pituitary dysfunction psychoses are said to be very rare. In acromegaly there is loss of sex power, apathy, want of initiative, poor memory, slowing of speech and of thought in some cases and in others exaltation and restlessness.

In the early stages of Addison's disease the symptoms are summed up in the so-called Addison syndrome, and are usually fatigability, asthenia, low blood pressure, anorexia, loss of energy, and general body weakness. Headaches will occur, attended by tinnitus, insomnia, and vertigo. As the disease advances there may be delirium, convulsions, stupor, and coma.

There is little known of the relationship of gonadal disorders and deformities to mental diseases. There is much evidence of some connection but we lack knowledge as to what it is. On the wards of mental hospitals the majority of patients, if examined, will show some degree of variation from the normal in the secondary sexual characteristics. Many of the female patients will have masculine distribution of hair, including beard and mustache. Many of the men who have formerly been known for their masculine traits, fathers of families, former athletes or soldiers, will have taken on mons padding, loss of beard, and fatty deposits in the breasts and hips. Usually these cases lack heterosexual libido. In the old men who get into difficulty because of perverse attention to little girls impotency predominates. The male exhibitionist is often impotent. I have usually found nervous or mental symptoms in cases of cryptorchism. On the other hand it is well known that men may go through life with normal mental faculties, who because of one reason or another are deprived of satisfaction of the normal sexual urge. "Something more than a disease of the gonads is apparently necessary to produce a mental illness. That something more may be an aplasia or dysfunction of the tissues (brain or gland) or it may be a psychic predisposition."

I would like to add one observation in relation to pelvic surgery in women. I hope that it will not offend the surgeons as I am sure that no ethical surgeon will perform an operation unless he has ample indications,

but I am convinced that if there were fewer low abdominal scars there would not be such an increasing need for beds in mental hospitals.

Vitamin Deficiency: The outstanding psychosis associated with improper vitamin intake, and one that ranks a separate unit in the official classification, is pellagra. Space does not permit of the history of this disease. It has a geographical distribution and we see little of it in the northern part of America. It is encountered here sporadically and further south endemically. Pellagra is characterized by dermatitis, inflammation of the entire alimentary tract beginning with the large beefy red tongue, and extending to the tender, inflamed anal orifice. Four to ten per cent of all pellagrins show mental symptoms. The nervous symptoms more commonly presented are paresthesiae of various distribution over the body, reflex changes, and occasionally convulsions. The essential pathology of the nervous system consists of widespread degeneration of the ganglion cells of the cerebral cortex, best seen in the giant cells of the motor area. It is an axonal reaction and Adolph Meyer described it as a "central neuritis." There is swelling of the cell body, chromatolysis, neuclear displacement, and fatty accumulation. Marked degeneration of the dorsal columns of the cord has been noted, although the roots are usually intact. The mental symptoms usually encountered with pellagra are in the nature of a depressive state, a chronic organic type of reaction with memory loss, etc., or a delirium. Pellagra should be taken in hand as early as possible. Perhaps the most diagnostic sign we have is the dorsal bronzing of the hands and feet. This usually is noted in the early spring and tends to recede, leaving a thickened skin surface. These patients must be started on treatment early. If the disease is allowed to advance to a late stage the prognosis is poor. Treatment consists of diet and expectant care. Pellagrins should have the richest trays available in the hospital kitchen.

Chronic Constitutional Disorders: Carcinoma is not noted as a cause of psychosis except when there is metastasis to the brain. However, it is conceivable that a person whose nervous system is such as to predispose to mental disease may develop mental symptoms. It is not at all infrequent in cases of cancer of the stomach, or of the prostate, or large bowel, to note irritability, suspicion, and depression. When metastasis to the brain occurs the gray matter is particularly affected. Meningeal carcinomatosis is occasionally encountered. There may be direct invasion of the brain from the skull or the face. However, the metastasis is more commonly from the lungs where malignant cells break off from the primary growth and are carried by the blood stream to the brain where they find resting places and form small rounded tumors. Growth and extension compresses the brain substance which degenerates. The symptoms seen are those of tumor as well as toxicity. The symptoms are variable according to the part of the brain most affected. Headaches, pathologic sleep, delirium, and dementia are likely to occur.

Tuberculosis is another chronic systemic disorder which is not primarily a factor in the production of mental disease. There may be a toxic delirious reaction in the case of an acute miliary form, and in tuberculosis meningitis, but in the slow, progressive, and chronic form where tuberculomata form in the brain the symptoms will be those of a brain tumor. Such cases do not produce specific symptoms. Convulsions may occur.

Vascular Diseases: I have mentioned above that sudden onset of psychotic symptoms may be encountered suddenly in heart disease, briefly describing the symptoms. The most common type of psychosis with vascular disease, and one that is separately listed in the official classification, is psychosis with cerebral arteriosclerosis. The etiology and pathology of arteriosclerosis requires no discussion. We know that changes in the vessels occur much earlier in some persons than in others and that in all persons it is a progressive and unavoidable process. We have all seen men

with radial arteries that were so calcified as to be incompressible or beaded, and yet the patient presented no marked mental disorder. On the other hand we have seen patients whose arteriosclerosis was very mild but whose mental processes were disordered.

Often we resort to examination of the fundi to determine the presence of a sufficient degree of sclerosis to warrant our ascribing the mental symptoms to this cause. The vessels of the fundi are really cerebral vessels and by inspecting them we are able to form a much better opinion of the cerebral arteries than we are in any other manner. They do not need to be tortuous, although they more frequently are. They may be of the so-called "silver thread" type, with engorged veins, sometimes showing ampulation. Arteriosclerotic brain disease seldom occurs before fifty years of age, but may be encountered any time after the beginning of the sixth decade. Perhaps the most common mode of onset is an apoplectic seizure, most frequently due to a cerebral thrombosis. In about one-sixth of the cases of stroke the cause is a spontaneous rupture of a cerebral vessel, most commonly the lenticulostriate artery. In the other five-sixths the trouble lies in a clotting of blood in the vessel and consequent cutting off of sufficient blood supply to the corresponding part of the brain. Cerebral hemorrhages do not occur in the presence of low blood pressure. Hemorrhage is more likely to be fatal than thrombosis. Of course the brain cells that are destroyed do not regenerate and their places are taken by cystic formations. Whether it be a clot that results from an extravasation of blood into the brain substance or an area of necrosis resulting from intravascular clotting there is destruction of cells and consequent residuals from the insult. The neurological results take on the form of spastic paralysis, usually a spastic hemiplegia, with exaggerated reflexes, speech changes, etc.

The most common mental symptoms encountered, whether there be a cerebral insult or not, are memory loss, irritability, emotional instability, jealousies and suspicions, and reduction of intellectual faculties. When we encounter a patient whose age and history are indicative of an arteriosclerotic psychosis but who is fortunate enough to be physically well preserved and free from evidence of a vascular insult we must distinguish between senile psychosis and psychosis with cerebral arteriosclerosis. Each has its own place in the official classification of mental diseases. The differential diagnosis is sometimes somewhat difficult. Senile psychosis is seldom seen below the seventh decade (60 years). The pathological findings in the brain are both macroscopic and microscopic. The brain decreases in size and weight and the convolutions are shrunken. The sulci are widened and the ventricles are dilated, while the amount of cerebrospinal fluid is increased. The amount of sclerosis of the blood vessels is less than that seen in the arteriosclerotic type. Senile plaques are especially frequent in psychotic cases. These consist of peculiar rounded formations having the appearance of neural and glial elements rolled together into a conglomerate mass. The psychopathology of the senile is that of the childish old person. Memory fails, especially for recent events. Memory gaps may be filled by confabulations. It is probably on the basis of memory defects that paranoidal suspicions and ideas of persecutions develop. The person tends to wander away from home and become lost. Hoarding is common—hoarding of useless and worthless objects. Orientation is lost. Hallucinations of sight and hearing often occur. Apathy or irritability represent the usual emotional picture. Presbyophrenia is not uncommon. This is a tendency to busy himself about nothing—picking up papers and laying them down, changing the chairs around, or picking at the window curtains. It is characterized also by a resemblance to Korsakow's syndrome, that is a retention defect with confabulation. The presenile psychosis known as Alzheimer's disease, presents presbyophrenia typically, with the addition of some focal signs. The typical arteriosclerotic psychosis is more likely to take on the mental symptoms

in keeping with the former personality of the patient. In an epileptoid individual convulsions are likely to occur. In a schizoid type of individual auditory and visual hallucinations occur. The voice of the Lord descends from Heaven to the patient, or he sees angels. In the paranoid type of personality the psychosis will bring out ideas of persecution and sometimes delusions of grandeur. In the cycloid type there may be deep depression. In any single case there may be a conglomerate admixture of the various symptoms. The prognosis of a senile psychosis is poor. To prognosticate a case of psychosis with cerebral arteriosclerosis is to guess. If the patient is removed from his home to the hospital where proper elimination can be established and the impactions of the intestines which are almost invariably found when the physician sees him can be corrected, his chance for a recovery from the hallucinatory and delusional content is good. The cause can not be removed completely as the sclerosis remains, but the metabolic processes and hygienic habits can be corrected. Send such patients to the hospital, cleanse the intestines, check the blood for anemia, the stomach for hypochlorhydria, establish hygienic habits, and prescribe saturated solution of potassium iodide after each meal.

Thromboangiitis obliterans has been mentioned as the cause of cerebral lesions with consequent neurologic symptoms. It has not been established, however, that Buerger's disease causes cerebral lesions, and although I have encountered and treated mental patients who were suffering from this condition I have not regarded it as intimately related to the psychosis.

Miscellaneous: When a psychosis occurs in the course of glaucoma simplex it probably follows the inclinations of the personality panel to which the patient belongs. It is apparently a rare complication. In the case that has come to my attention the mental symptoms were irritability, quarrelsomeness, and ideas of persecution.

Multiple sclerosis usually has its beginning early. The cause is unknown. The earliest manifestations are transitory and early diagnosis is difficult. There may be numbness of the legs, muscular weakness, and amblyopia, all of a transitory nature. A mild type of euphoria is the earliest common mental symptom. This feeling of well being is maintained in spite of the seriousness of the disease. In view of this fact, as the disease advances and produces neurological signs, there is a tendency to confuse it with dementia paralytica. Transient symptoms may be impairment of vision, paresthesiae of the extremities, ocular palsies, and occasionally a slight degree of hemiplegia. The most important sign is said to be pallor of the temporal half of the optic disc. In the later stages the cardinal signs are nystagmus, intention tremor, scanning speech, temporal pallor, and absence of the abdominal reflexes. From the psychiatric viewpoint we note continued euphoria, and memory disturbances. In a small number of cases there is a mild depression, or persecutory and grandiose delusions. Auditory and visual hallucinations have been reported.

A condition closely allied in some way to the Parkinsonian syndrome of encephalitis is hepatolenticular degeneration. This is rare and the etiology is not known. The onset is early in life and the disease is progressive and fatal. It is an extrapyramidal syndrome and the lesions are most characteristic in the caudate and lenticular nuclei, although they are patchy and consist of degeneration of the ganglion cells with moderate proliferation of the glia. These lesions are generally associated with a peculiar red hepatic cirrhosis. I have in mind a case upon which I did the autopsy and found a small, reddish, hobnail liver. The neurologic manifestations are tremor, rigidity, and contractures. Athetotic movements are seen occasionally. Psychic and emotional changes are present in all cases. The ultimate result is complete dementia. The prognosis is from two to four years.

Having referred above to the Parkinsonian syndrome of encephalitis I will mention in

passing, the true Parkinson disease, paralysis agitans, or palsy of the aged, with its extrapyramidal lesions, and characteristic picture of the old man whose pill-rolling tremor, scanning speech, and festinating gait typify the advanced stages of the disorder. The disease is sufficiently familiar as to preclude further discussion in this thesis except to say that there are no typical psychopathological reactions related to this condition. There are bradykinesia, spontaneous unrest, emotional instability, oftentimes pathological laughing and crying, and such other symptoms as go with senility.

Only one other psychosis may be included here and that is the one associated with pregnancy. As a matter of fact because of the different stages at which mental symptoms appear we can not call it a single psychosis. Let us first consider the mental upset that occurs in some cases of illegitimate pregnancy in a young girl. She suddenly discovers the fact that she is to become a mother and the situation is an intolerable one for her. She responds by developing a psychosis. This type of psychosis has no definite reactive mould. She may go into a catatonic stupor or she may become excited in a hebephrenic or manic manner. After being relieved of the pregnancy she is likely to settle down, regain her composure, recover from psychotic content and actions and be discharged as recovered. Such cases have come within my observation and experience and I am led to conclude that the prognosis is good if the physicians change the situation by performing a therapeutic abortion.

Again we have the appearance of a psychosis in the advanced stages of pregnancy in a married woman, whether associated with preeclampsia or not. It is often said that the usual time for the onset of psychoses is at puberty, pregnancy, or the menopause. These cases demand complete examination from all angles and consultation between the obstetrician, the internist, and the neuropsychiatrist before any definite action is taken. The prognosis varies with the individual.

One of the most interesting and perhaps the most trying to the family physician is the psychosis which occurs soon after the birth of the baby, unheralded by sepsis or other complication. We call this a postpartum psychosis. The patient screams, fights, uses profane and obscene language, and is not quieted by the usual sedative drugs. Sometimes there will be a strong delusional trend. The patient is very demanding and her powers of thinking are disordered. This is the type of patient who should be placed in a mental hospital without delay. It is cruel and unfair to her to keep her at home, in restraint and under the influence of sedative drugs. She needs to be removed from family and friends and permitted to express herself as fully as she desires. Under the influence of proper medication and especially hydrotherapy her chance of early recovery is good.

Summary: The exact etiology of most psychoses can not be determined in the light of present day knowledge. It is important to maintain the conception of the integration of the human organism and to keep in mind the inseparable relationship of the soma and the psyche. The same natural laws operate in health and in disease. The structure of the mind includes a conscious and an unconscious. Adaptation is the key word and imbalances are always present. The arbitrary separation of mental disorders into organic and psychogenic psychoses is misleading. Seven groups of somatic diseases are discussed with reference to their relationship to psychoses.

P. A. D.

Asphyxia constitutes what physicians call a major medical problem. In the concluding chapter of "P. A. D., Prevent Asphyxial Death" in the April *Hygeia*, Dr. Paluel J. Flagg compares the physical state of the patient in profound asphyxia and in profound anesthesia. They are almost identical.

Because of the physician's familiarity with the care of the unconscious and because of his daily attendance on such patients the direction and the control of gas therapy naturally becomes the duty and the privilege of the physician in charge of the administration of anesthetics.

MILD HYPOTHYROIDISM*

By G. H. BARKSDALE, M. D.
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My brief this evening is made from three papers which have recently appeared in the *Annals of Internal Medicine*. The authors are Blanton P. Seward, August, 1935; Roger I. Lee, December, 1935, and Ralph M. Watkins, June, 1934. Seward based his papers on a series of 53 cases; Watkins on 50 cases. They are all in accord in that the clinical picture of mild hypothyroidism is vague, often unrecognized and often encountered. So varied were the symptoms and physical findings noted that the only finding which remained entirely and unqualifiedly constant was that of a low metabolic rate. These papers take no cognizance of gross deficiencies, as myxedema or low metabolic rates incident to certain debilitating diseases.

Dr. Lee, in opening his paper, refers most interestingly to the days when medical men were slaves, so to speak, to the pathologist, who, by tradition, assumed that that which could not be demonstrated at postmortem was not disease. "If actual changes were not demonstrable it was a defect in technique, not in theory. The prevailing thought of the times was entirely out of sympathy with any notion of transitory functional changes without evident organic change, or with the notion of persistent disturbances of any sort which could not finally be solved postmortem. In fact, our ideas of clinical medicine were largely the reconstructed pictures from the autopsy table." He further opines that "a few bold spirits dared question this until the matter of endocrinology became a plague spot in the field of internal medicine. Now we find a situation in which functional studies are sometimes carried on with a total disregard of morbid structural anatomy."

There is a general agreement among these writers that there is no constant parallelism between the basal metabolic rate and the clinical symptoms. One case cited, a boy of twelve, with a basal rate of minus 40, did not present the picture of true myxedema. The same writer (Seward) states that the basal rate does not always give a true picture and the clinical impression is difficult to define. He further adds that "It is not possible to always correlate the basal rate with the symptoms, for many patients with a moderately decreased rate have more pronounced symptoms than those with a lower rate." Again, "the basal rate has frequently seemed to serve rather as a first approximation and not as an exact test"—(Lee). He adds that "persistent low basal rate may be taken roughly as evidence of hypothyroidism." Further, a number of individuals carry a constantly low rate and seem entirely well. Thurmond and Thurmond were quoted as presenting eleven patients with a rate of minus 11 to minus 24, who had no complaints. He finishes his remarks by stating that "Only by careful study, in addition to basal rate tests, can the diagnosis of hypothyroidism be made." Further, it is noted in several cases that the administration of thyroid extract in various ways does not help the symptoms—(Lee). On the other hand, basal readings have been ignored and thyroid administered. "Occasionally, excellent results are obtained by the administration of thyroid to patients with essentially normal basal rates; at times it cannot be tolerated by these patients." Either it (1) does not restore the basal rate to normal; (2) does not benefit the patient, or (3) when persisted in, headaches, palpitation, nervousness, etc., follow.

*Read before the Charleston Journal Club, January 20, 1936.

Before discussing the symptoms of mild hypothyroidism, it should be again emphasized that there is no clinical picture of this disease — physiologic imbalance would probably be a better term. Watkins refers to it as a disease, condition or syndrome. "For it probably is not a specific disease."—Lee "Hypothyroidism seems rarely to be a disease entity but certainly a common symptom. It is rather one of the fragments that make up the temporary or permanent pattern of the functional entity of the individual."

In studying these papers, I have gained the impression that if one be inherently weak in one or more organs or anatomic systems, either through heredity or by virtue of disease, that correspondingly in the absence of an adequate supply of thyroid extract, that weakened organ, or anatomic system, will register complaints. Obviously, then the symptomatology must vary accordingly. There is no more definite picture in mild hypothyroidism than there is of hypertension or arteriosclerosis which might make a dement of one individual and a nephritic of the other. "Certainly, some families have many incidences of dysfunction of the thyroid. It is also noted that the majority of these people had had an abnormal number of potentially serious ailments in earlier life, that the women were definitely less fertile and that a strikingly large number of them had been operated upon—70 per cent."—(Lee).

Symptomatology: In arriving at the symptomatology, I am sure that each one here has in mind a symptom which he regards as significant of this dysfunction. If I were to tabulate all of the complaints listed in these articles and in the literature they quote, there would be such a hodge podge that we would get nowhere. Accordingly, I have listed the symptoms which seem most frequently identified with the disease according to these writers, and largely in their order of occurrence:

1. Nervous, 86 per cent;
2. Loss of energy and initiative, 82 per cent;
3. Abnormal fatigue, 54 per cent; (Seward puts this first);
4. Abnormal gaseous eructions, 50 per cent;
5. Constipation, 44 per cent;
6. Mental apathy, 40 per cent;
7. Sleepiness, 28 per cent; (Seward says insomnia more often noted than drowsiness);
8. Headaches, 20 per cent.

Observations and Physical Examination:

1. Pulse rate up in 52 per cent, low in four per cent, normal in 44 per cent;
2. Basal metabolic rate average minus 14.3 per cent—(Watkins); less than minus, 15 per cent—(Lee);
3. Associated disease in 52 per cent of cases;

Focal infection, colitis, arthritis, cardiovascular disease, pelvic disease. No one seemed especially important. The point as previously made is—are these people more prone to disease or does disease render one more prone to hypothyroidism?

4. Overweight, (16.1 per cent) in 54 per cent; underweight, (12.8 per cent) in 26 per cent;

"There seemed to be no relationship between the weight and the degree of thyroid insufficiency in our patients."—(Seward).

5. Abnormally dry skin and hair, 56 per cent;
6. Four-fifths of the cases occurred between 20 and 49 years;
7. Females to males, ratio of 4 to 1;
8. Certain cases which appeared to be neurotics became normal as the thyroid state improved;
9. Vasomotor rhinitis was commonly associated with a low basal rate.

Treatment: (Seward) — Many irregular effects and responses were noted as to the size of dosage. In some the response was rapid, in others slow. There was no constant ratio between complaints and basal rate. Maximum improvement, as a rule, came several weeks after return of basal rate to nor-

mal. About one-half of the cases do satisfactorily on taking thyroid at intervals. Attention should be given to associated complaints and proper medication should be prescribed. Rest, diet, etc., are referred to.

Conclusions as Formulated From These Three Papers: 1. The disease is unquestionably common and often unrecognized;

2. The disease has no clear-cut specific signs or symptoms;

3. Fatigue is probably the most common symptom. Nervousness, palpitation, gastro-intestinal disturbances, various aches and pains are all common;

4. Reduced basal rate without the symptoms does not justify the diagnosis;

5. The severity of the symptoms does not necessarily parallel the basal rate, neither can the treatment be regulated in an exact way by the basal rate;

6. The disease is to be differentiated from hypopitutiarism, hypo-ovarianism, hyposuprarenalism, from tuberculosis, certain neuroses and neurocirculatory asthenia.

SOME SURGICAL ASPECTS OF DIABETES

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DIABETES MELLITUS is a disease in which there is a deficiency in the secretion of the Islands of Langerhans of the pancreas. It is characterized by the presence of sugar in the urine and an increase of sugar in the blood.

Since diabetes is primarily a disturbance of carbohydrate metabolism, it is important to consider the latter in more detail. Normally, the carbohydrate food stuffs taken in the diet are eventually absorbed into the blood, chiefly as dextrose, which is readily soluble, and carried to the liver. In the liver, dextrose is converted into glycogen which is less soluble than dextrose and can be stored. Then as required for bodily needs, the glycogen is reconverted into dextrose and passed back into the blood stream. The regulation of this process is automatic and adjusted so that the percentage of sugar in the blood in health ranges between 0.8 to 0.15 per cent.

Diabetes is most frequently seen in patients ranging from the ages of fifty to seventy, but it can occur at a much younger age. It occurs more frequently in the female than in the male, and in the Hebrew race more often than among Gentiles.

The actual cause of diabetes mellitus is a deficiency of endogenous insulin. In addition, there are certain other factors which play a part in its etiology. These are obesity, heredity, and activities of the various glands, particularly the thyroid and pituitary. Other factors which at times appear to predispose to diabetes are infections, especially of the gall-bladder, and nervous strain. The first symptoms are weakness and loss of strength, polyuria, polydipsia, and polyphagia. Associated conditions are carbuncles, furrunculosis, and neuritis.

At times uncontrolled diabetes mellitus may exist without glycosuria and diagnosis can only be established by blood sugar determinations, though as a rule the diagnosis can be made without blood sugar tests. Urinary examination will ordinarily detect it, especially when each specimen of the twenty-four hour urine is examined.

In the treatment of diabetes there are three important agencies: Diet, insulin, and exercise. To me the most important thing is education of the patient, who should be thoroughly taught as to diet, the use of insulin, and how to take care of his health. He should make a study of the disease and its treatment and should be almost as thoroughly versed in the methods of treatment as the physician

himself. There are many diabetics who, by merely omitting pastries, cakes, and sugar from their diet, become sugar free. Others become sugar free by omitting from the diet most of the starches such as potatoes, macaroni, rice, and bread. If this is not enough to render one sugar free and the blood sugar within normal range, insulin becomes necessary.

Before the introduction of insulin, surgery performed on diabetics was most often fatal. It was not done unless an acute emergency arose. Now the knowledge of the use of insulin, and by means of glucose to combat the acidosis associated with the surgery, makes it possible to perform operations very successfully and there is no reason why there should be any hesitancy in doing major operations providing the patient is gotten into good condition prior to operating. Even emergency operations can be performed with reasonable safety.

Before treatment is commenced it is necessary that a correct diagnosis be made, for all cases of polyuria and glycosuria are not necessarily diabetes mellitus, but may be renal diabetes or diabetes insipidus. In diabetes insipidus the specific gravity of the urine is very low and sugar is absent, while in renal glycosuria the addition of a definite amount of carbohydrate to the diet increases the amount of sugar in a twenty-four hour specimen to a slight extent only, while in diabetes mellitus an increase of carbohydrate in the diet increases more in proportion the amount of sugar in the urine.

Food and insulin are necessary components in the treatment of diabetes. One gram of protein should be given per kilo of body weight and it will be remembered that 58 per cent of this is converted into glucose. The carbohydrate, fat ratio is probably best met by figures one to one and one-half, which will prevent ketosis and will give the proper amount of carbohydrate in the diet. Normally glucose is transformed to glycogen and stored in the liver and body tissues. It can be converted into energy when called upon by the system. In diabetes the ability to store sugar and oxydize it is impaired and as a result the excess glucose remains in the blood stream and is excreted by the kidneys. The Islands of Langerhans in the pancreas secrete a substance which oxydizes glucose and converts it into energy, and it is this oxydizing substance which is lacking or deficient in the true diabetic. Giving insulin merely supplies this deficiency present in the system.

The diet must be figured by the caloric needs of the individual and varies with the age, height, weight, and sex of the patient. After this is determined, three meals of equal caloric value are best given every day. It is necessary to give enough glucose to burn the fatty acids contained in the fats of the diet and enough insulin to oxydize the glucose in the diet. When a patient still excretes sugar and has been on a low caloric diet for five or six days' time, it becomes necessary to give insulin, or insulin may be necessary when the diet is increased in order to meet the caloric needs of the individual and sugar appears in the urine.

It is usually necessary to give one unit of insulin for each two grams of sugar found in a twenty-four hour specimen of urine. Insulin should be given in two or three doses, the largest dose being given in the morning. Insulin is given fifteen to thirty minutes before meal time.

Where operation can be postponed it is advisable to do so until the urine is sugar free and the blood sugar is in the normal range so that there may be a store of glycogen in the tissues. By the careful use of insulin and glucose intravenously at the time of operation the patient may be easily carried through the operation and postoperative convalescence without the occurrence of acidosis. With the patient sugar free before the operation, during the operation or immediately thereafter 500 to 1,000 cc. of a five per cent solution of pure glucose in distilled water with one unit of insulin for each two grams of glucose should be given intravenously. Soon thereafter it will be necessary to give more insulin,

small amounts being repeated at frequent intervals, keeping the patient's blood sugar low. By these means it is possible to perform any major operation on diabetics in comparative safety.

In emergency operations when the patient cannot be properly prepared for operation it is advisable to give large doses of insulin immediately prior to operation, the dose varying from 20 to 100 units. During the operation or following, glucose and insulin should be given intravenously. The urine and blood sugar should be carefully watched thereafter, giving sufficient insulin to prevent acidosis and a hyperglycemia.

It has been stated by Joslin that there are today many more diabetics than there were twenty years ago because the use of insulin has permitted them to live to a greater age. He also estimates at least one-third of the diabetics during the course of their life require surgical treatment of some form or other. To delay surgery in emergencies and in the presence of curable infections is of no advantage.

Routine procedure at The Mayo Clinic has been as follows: "The patient is observed in the hospital for two or more days while a measured diet is prescribed and sufficient insulin is used to clear the urine of sugar and to free it of ketone bodies. The diet for these patients is made somewhat richer in carbohydrate to provide extra glucose for storage as glycogen, but we have not found it necessary to resort to very high allowances of carbohydrate such as have been recommended by various clinics. None of our preoperative diets have contained more than 170 gm. of carbohydrate. If dehydration is apparent, fluids are given by rectum or by vein. On the morning of operation both breakfast and insulin are withheld. Occasionally a small dose of insulin is injected before the patient goes to the operating room; usually this is not given."

Following the operation the patient should receive injections of insulin and fluid, either saline or glucose. At first, periodic blood sugar determinations are made to determine insulin dosage, but later by analyzing each specimen of urine voided the amount of insulin necessary to be given can be determined. Injections should be made at shorter intervals, never allowing more than six hours to elapse between them. As soon as it is possible, give fluids by mouth containing a moderate amount of glucose per content, such as ginger ale or orange juice.

There are two dangers to be watched out for following operation: One is the overdosing of insulin, and the other is the occurrence of acidosis. It is better to err on the side of too little control than to give too much insulin for the first few days after the operation. A little sugar in the urine will do no harm while an attack of insulin shock has much more serious consequences.

One of the most serious complications of diabetes is gangrene of the extremities. It has been said that one should either operate early and operate high or treat the lesion medically and thus avoid all surgery. It is very dangerous to attempt to save feet by removal of toes or by open drainage, but is far more preferable to operate well above the seat of infection. If the gangrene is dry and not grossly infected, a dry dressing is used at the site of the lesion; but if serious infection is present, the Mayo Clinic advises a wet dressing of fifty per cent alcohol and a saturated solution of boric acid. If in twenty-four hours the infection shows signs of abating, treatment is continued until it is fully controlled. Then it is decided upon whether amputation is necessray on account of the accompanying gangrene or lack of circulation to the part. If the infection fails to subside after twenty-four hours of treatment, surgery is recommended.

I am quoting below four cases of successful operations which were performed on patients having true cases of diabetes mellitus:

Case 1: Mrs. L. H., white, housewife, Admitted October 8, 1930.

Chief Complaint: Tumor in pelvis.

Family History: Has been married eleven years. Had one child which died at age of nine days.

Past History: Pneumonia, diphtheria, and influenza. No operations. Has had diabetes for five years, during which time has been taking insulin.

Present Illness: About two or three months ago patient noticed an enlargement of the lower abdomen unassociated with any menstrual disturbance. Had backache and sensation of weight in pelvis. There has been no loss of weight.

Physical Examination: Female, aged thirty-five. Weight, 130 pounds. Height, five feet, two inches. Temperature, 97.6; pulse, 72; respiration, 20. Blood pressure 110/76. Examination negative except for slight fullness in right lower quadrant where a mass can be palpated. Uterus and cervix normal in size. Firm, hard mass in region of right ovary about size of grapefruit. Freely movable.

Diagnosis: Fibroid of uterus and diabetes mellitus.

Laboratory Reports: Urine — specific gravity, 1030; albumen, negative; sugar, 2.71 per cent. Blood sugar, 338 mgs. per 100 cc. of blood.

Treatment: Following admission, was put on diabetic diet.

Protein	60 grams
Fat	80 grams
Carbohydrate	120 grams
Total	1,440 calories

She was given forty-three units of insulin the first day, divided into twenty units before breakfast, eight before lunch, and fifteen before dinner. The patient gradually became sugar free with the reduction of blood sugar to 160 mgm. prior to operation. Insulin dose at this time was twenty-five units a day. Immediately following the operation she was given 200 cc. of five per cent glucose and twenty units of insulin. Ten units of insulin was repeated in two hours and five units in six hours. The blood sugar rose to 276 mgm. per 100 cc. Twenty units of insulin were given daily and as soon as nausea ceased the patient was put on carbohydrate fluids.

Operation: Performed by Dr. W. A. McMillan on October 21, 1930, and a large tumor mass involving the uterus was removed.

Pathologic Report: Tumor attached to uterus, right tube and ovary, size of a grapefruit, irregular in shape. Tumor hard in consistency, irregular in outline, well encapsulated. Cut section shows degeneration of fibroid with some fluid present, apparently a non-malignant degeneration.

Left tube, serosa pale. Muscularis thin. Mucosa pale. Lumen patulous. Contents serous. Diagnosis: Normal tube.

Left ovary, size of walnut, slightly cystic. Otherwise normal ovary. Appendix with mesentery attached, five inches long. Serosa pale. Muscularis thin. Mucosa pale. Lumen patulous. Contents mucoid. Diagnosis: Chronic appendicitis.

Microscopic Examination: (By Dr. Standish McCleary of Baltimore, Md.) The uterine tissue from Mrs. L. H. shows uterine muscle which has undergone hyalin degeneration, a quite benign change. Nowhere is there present any characteristic of malignancy.

Remarks: She made an uneventful recovery and was discharged from the hospital running a very slight trace of sugar in the morning specimen and clear in the evening specimen. Her blood sugar was normal. Discharged in good condition.

Case 2: Mrs. Mary H., housewife, aged fifty-three, married, white. Admitted April 7, 1930, for diagnosis of fibroid of uterus and diabetes mellitus.

Chief Complaint: Abdominal tumor and diabetes.

Family History: Negative.

Past History: Diphtheria, typhoid, and influenza. Was treated for gangrene of the toe in a hospital in Marietta, Ohio, in January, 1930. Has had diabetes for the past ten years. Has been married sixteen years, no children. Menses ceased two years ago. No bleeding since.

Present Illness: For past ten years has had trace of sugar in urine and blood sugar has ranged as high as 300 mgm. Has no polyphagia, polydipsia, or polyuria. Has had some loss of weight recently. Has noticed enlargement of abdomen since diagnosis of fibroid of uterus was made in January, 1930.

Physical Examination: Weight, 136 pounds; height, five feet, nine inches. Temperature, 97.4; pulse, 78; respirations, 20. Blood pressure, 200/110. Examination negative except for fullness in lower abdomen where mass apparently continuous with uterus can be felt extending up to umbilicus. Vaginal examination shows cervix small and soft to touch. Uterus much enlarged.

Laboratory Examination: Urine—Specific gravity, 1018; sugar, seven-tenths of a gram; albumen, negative; diacetic acid, trace. Red blood count, 5,270,000; white blood count, 8,350; polys, 67 per cent; blood sugar, 206 mgm.; blood urea, eleven and two-tenths mgm.

Operation: Patient operated on April 14, 1930, by Dr. W. A. McMillan at which time the blood sugar was 130 mgm., and the urine was sugar free. Operation consisted of a supravaginal hysterectomy and removal of appendix.

Pathological Report: Appendix with mesentery attached, six inches long. Tip, bulbous. Serosa, pale. Muscularis, thin; mucosa, pale. Lumen, patulous. Contents, serous. Diagnosis: Chronic appendicitis.

Large tumor involving body of uterus. Size of large grapefruit Surface smooth. Body made up of fibromuscular tissue, smooth in structure. Endometrium slightly congested. Uterus amputated at cervix. Diagnosis: Interstitial fibroid of uterus.

Treatment: Before operation diet consisted of the following:

Protein	60 grams
Fat	80 grams
Carbohydrates	120 grams
Total	1,440 calories

The insulin dose consisted of eighteen units daily. Four units of insulin were given on the morning of operation and immediately following operation 200 cc. of 10 per cent glucose were given intravenously with ten units of insulin. Six units of insulin were given two hours after operation and repeated in three hours and again three hours later. As soon as nausea ceased, tea and sugar were given with five units of insulin. Insulin dose was increased on the day following to five units daily with orange juice and clear broth being added to the diet. The patient made an uneventful recovery and upon discharge from the hospital on April 29, 1930, the blood sugar was 104 mgm. and the urine was sugar free.

Case 3: Mr. S. O. P., station agent, aged fifty-two, married. Admitted May 25, 1931, with diagnosis of acute appendicitis and diabetes mellitus.

Chief Complaint: Pain in right lower abdomen.

Past History: One attack of pain in lower right abdomen five months ago, lasting three days and gradually subsiding.

Present Illness: Two days ago had severe sudden pain over entire abdomen followed by nausea and vomiting. Pain gradually localized over right lower quadrant and has continued until present date. He has been taking treatment for diabetes.

Physical Examination: Negative except for localized tenderness and rigidity over right lower quadrant of abdomen.

Operation: This was deemed an immediate necessity and was performed the same day after admission, when a gangrenous, perforated appendix was removed and three cigarette drains were placed at the base of the cecum.

Treatment: Immediately before operation the urine showed a trace of sugar and the specific gravity was 1030. The blood sugar was 220 mgm. The white count was 21,200. Ten units of insulin were given immediately before operation and five units were given every four hours following. Five hundred cc. of five per cent glucose and five per cent sodium bicarbonate were given intravenously. The blood sugar rose to 360 mgm., but by the use of insulin and careful diet this was reduced to 210 mgm.

Postoperative Treatment: The wound drained freely and he had an uneventful recovery until June 10, 1931, when he developed pain in the right lower chest, accompanied with some dyspnea. His condition progressed to develop bronchial pneumonia from which he made an uneventful recovery. His insulin dose is now thirty-five units daily and his blood sugar is 140 mgm. His diet is as follows:

Protein	40 grams
Fat	60 grams
Carbohydrate	90 grams
Total	1,060 calories

Case 4: C. O., white, child, age 11 years. Her history is rather interesting, so I am going to give it in more or less detail.

Chief Complaint: Diabetes mellitus.

Family History: Mother and father living and well. Only child. No familial history of diabetes.

Past History: Influenza, February, 1925; pertussis, May, 1927; measles, March, 1930; scarlet fever, 1929; several bad attacks of tonsillitis. Swims and rides horseback.

Present Illness: In April, 1925, following attack of influenza in February, first learned she had diabetes. She developed polydipsia, polyphagia, and polyuria and slept most of the time. Tried diet for six weeks and ran sugar in urine constantly. Put on insulin 15-10-10 and diet. Has had many insulin shocks; more at first than at present. One attack of severe acidosis, bordering on coma in spring of 1927. Present diet high in carbohydrate, low in fats. Urine, sugar free. Present insulin dosage, nine to eight units. Appetite excellent, bowels regular, no indigestion, no cough or cold.

I had been pondering for a long time whether to have her tonsils removed, knowing that they should

come out, but being a little skeptical about doing so because of the risk run on account of the operation. She had her tonsils removed in the fall of 1931 and made such an excellent recovery that I have never hesitated since to do surgery on a diabetic.

In 1932 she developed acute appendicitis, was rushed to the hospital, given her usual dose of insulin and restricted diet, taken to the operating room where her appendix was removed. Following the operation, fluids were given intravenously and a small dose of insulin. As soon as her condition permitted, she was given ginger ale and water by mouth and the insulin dose was repeated every six hours, keeping a careful check of the urine voided to see when more insulin was needed. She made an uneventful recovery.

These cases demonstrate that major surgical operations may be performed in the presence of diabetes and that often emergency operations must be performed in the presence of high blood sugar, but with immediate remedial measures the patient can be brought through successfully.

DIAPHRAGMATIC HERNIA

(Report of Three Cases of Paraesophageal Hernia)

By VERNON L. PETERSON, M. D.
Charleston, W. Va.

DIAPHRAGMATIC HERNIA is probably more common than is generally believed. The fact that it is looked for at the present time has caused the apparent increase in its incidence and physicians have come to recognize a group of symptoms suggesting the presence of the lesion. The lesion may be present in children, although a far greater number are reported in people during the fifth decade of life.

Harrington[1] of the Mayo Clinic routinely examines the diaphragm in all operative cases where the incision permits exploration of the cardia. It is his opinion that a number of the cases operated upon for gall-bladder or appendix with unsatisfactory end results may have their symptoms as the result of diaphragmatic hernia usually of the paraesophageal type. Recognition of a diaphragmatic hernia from the clinical symptoms alone is difficult because of the complex symptomatology, which often simulates other organic diseases of the abdomen and thorax.

The symptoms will depend upon the mechanical interference with the function of the herniated abdominal viscera, or the degree of interference with the normal function of the diaphragm, and on the amount of increase in pressure which the herniated viscera produce within the thorax, causing impairment of respiration and circulation.

The diagnosis of cholecystitis, ulcer of the stomach, hyperacidity, and at times heart lesions have been suspected. Pain may at times radiate to the left shoulder.

Lesions of the esophagus may be difficult to visualize because of the redundancy present. There are a number of cases reported, associated with esophageal ulcer, stricture and esophageal aclasia. Since a small per cent of these patients have complications involving the lower esophagus, it is advisable to do an esophagoscopic study in most of these patients before treatment is instituted.

The history of trauma is helpful in causing one to suspect a hernia. However, most of the cases are non-traumatic in origin. The hernia is secondary to the failure of the muscles forming the diaphragm to fuse, or a congenital weakness in an esophageal hiatus. The esophageal hiatus is the most frequent site of this lesion. The hernia is then produced by an increase in the intra-abdominal pressure, as in a crushing injury, abdominal obesity, or possibly during pregnancy.

Harrington gives an excellent summary

and discussion of the various types of diaphragmatic hernia.

Hernia of congenital origin may have a shortening of the esophagus, a shortening that will not permit the stomach to be replaced in the abdomen. This anomaly should be recognized by the röentgenologist, since surgery will not aid this type of lesion.

At times a large portion of the abdominal viscera may be within the chest. This type of hernia is usually found soon after birth, or is the result of a crushing injury with diaphragmatic rupture. When present at birth, it is due to failure of development or fusion of the diaphragmatic muscles.

The clinical syndrome of diaphragmatic hernia can be divided in accordance with two main anatomic groups; those in which the stomach only is incorporated in the hernia, and those in which the stomach, colon and small intestine are included in the hernia and very rarely the liver may be displaced into the thorax.

The symptoms of the paraesophageal type of hernia are more constant. I have observed three such cases during the past year. A brief history of each of these patients will serve to illustrate the usual chain of symptoms.

Case 1: FIG. I.—E. P., age 63, white, female, mother of six children presented herself for examination in December, 1933, giving a history of having had her gall-bladder and appendix removed eighteen years previously. During the past ten years she had been subject to recurrent attacks of nausea and vomiting associated with upper abdominal pain. The vomitus contained blood on several occasions. Any food eaten aggravated the condition. She was able to continue her work, but found it difficult to rest in a prone position. Her blood studies and urinalysis were normal. Blood pressure, 190/100. She was advised to return for a gastrointestinal study.

She did not present herself again until February, 1934, at which time her previous symptoms were worse and she complained of regurgitation of food, vomiting, associated with a burning in the epigastrium, and pain in the abdomen and chest. Gastric analysis revealed an absence of free acid, with a total acid of 25 degrees. Fluoroscopic examination of the stomach revealed a diaphragmatic hernia, the stomach did not empty in six hours. The röentgenologist interpreted these findings as due to a malignancy of the cardia.

An exploratory laporatomy was performed, no malignancy being found, it was thought that the adhesions secondary to the old cholecystectomy and cholecystitis were causing the trouble. A gastroenterostomy was performed. She was then placed on a liquid diet and returned to her home physician.

She returned in June complaining of pain in the lumbar region. The stomach symptoms had improved. She returned again in September, complaining of a return of her old gastric symptoms. Röentgen examination at this time demonstrated a normally functioning gastroenterostomy, with no evidence of small bowel obstruction. No lesion was demonstrated in the colon.

CASE I, FIG. 1.

Her symptoms were improved following the use of small doses of luminal, but she continued to lose weight and complained as previously.

On May 4, 1935, she was again examined and at this time a herniation of the cardiac end of the stomach was observed and the true lesion recognized. She was explored and a partial repair of the hernia was accomplished. A complete repair was impossible because of the presence of adhesions.

Case 2: FIG. II.—M. K., white, female, age 56, mother of two children, presented herself on February 2, 1936, with a chief complaint of gaseous indigestion, pain in the upper abdomen and chest, radiating to the left shoulder at times, headache and palpitation.

She had been subject to recurrent attacks at irregular intervals during the past two years, food made the discomfort worse, milk being the greatest offender. Her condition had gradually progressed so that in the past three weeks she had been able to take only a small amount of food. It had been necessary for her to walk the floor each night during the past two weeks to secure any comfort. She had never vomited, but had been nauseated on several occasions.

She had been told she had high blood pressure four years ago. Physical examination revealed a moderate obesity, with a pendulous abdomen. There was definite tenderness in the epigastric region. The heart was enlarged to the left with a blood

CASE II. FIG. 2.

pressure of 170/90. The other findings were not significant. Gastric analysis revealed an absence of free hydrochloric acid, with blood present in the gastric contents. The urine was of low specific gravity. Blood findings were not significant.

Röentgen study revealed a paraesophageal gastric hernia with one-third of the stomach in the thorax. The gall-bladder functioned normally.

Case 3: FIG. III—H. J., female, age 55, mother of nine children, presented herself for diagnosis, giving a history of having had a cholecystectomy five years previously, following which she developed a large ventral hernia.

Her surgeon reported the removal of a subacute gall-bladder associated with hepatitis, the liver margin being quite rounded. Following a cholecystectomy, a large ventral hernia developed; this was repaired a few months later. She complained of a drawing sensation in the epigastrium, nausea, indigestion, eructation of gas, associated with attacks of epigastric pain which at times radiated into the chest and shoulder. She had required morphine for

CASE III. FIG. 3.

relief on several occasions. She had lost ten or fifteen pounds in weight from her normal of one hundred and sixty pounds. Her appetite was poor and food of any type aggravated the symptoms. The discomfort was more marked when she was in a prone posture. She mentioned that on several occasions she would stand against a wall and stretch herself, thereby securing some relief.

Bile duct drainage revealed a thick bile. A flat x-ray plate of the right upper quadrant did not reveal any stone shadows. Röentgen examination of the stomach revealed a herniation of the proximal third of the stomach into the thorax, the herniation extending through the esophageal hiatus of the diaphragm. The esophagus and stomach were otherwise negative.

It is interesting in this case to note the development of symptoms following the repair of a large ventral abdominal hernia, sug-

gesting that the acute increase in the intra-abdominal pressure may have aided in the production of this hernia.

A review of the symptomatology reveals a variety of symptoms although there are several in common. Belching of gas, pain in the chest and upper abdomen, at times referred to the shoulder, nausea and vomiting, aggravated by food, especially following a large meal. Relief is obtained in part, by sitting or walking, with an increase in the discomfort when lying down. Cholecystitis or hepatitis was suspected in each case; two patients had had cholecystectomies.

The treatment is surgical if the patient's condition permits and if the symptoms are severe enough to justify operation. These patients were somewhat overweight so that a reduction in weight would be indicated, not only to assist in the reduction of the hernia, since a decrease in weight would tend to decrease the intra-abdominal pressure, as well as improve the patient's operative risk. Frequent small meals with the patient remaining in an upright position until the stomach has emptied. Powders liberating gas in the stomach to distend the cardia have been recommended.

The diagnosis of a paraesophageal hernia may be suspected from the clinical history and findings. Röentgen study of the chest may reveal a large hernia or suggest the presence of a hernia.

In default of such signs the behavior of the opaque mixture as it passes through the lower portion of the esophagus may be suggestive of a hernia. Camp and Kirklin[2] have called attention to a lag in the barium at the esophageal-gastric juncture; due to esophageal redundancy, the barium will pass upward to enter the stomach. The lesion may be demonstrated more adequately in those hernias that are spontaneously reduced by the patient assuming an erect posture, by applying manual pressure against the abdomen or having the patient assume a recumbent or even a Trendelenburg position. The patient is then asked to take a deep breath and strain against the examiner's hand, placed with pressure over the epigastrium. It is important to follow the gastric rugae into the thorax before a definite diagnosis is made.

Hernia in other situations may be diagnosed with the aid of the clysma. Eventration is the most perplexing simulant of diaphragmatic hernia. In eventration, the barium passes through the esophagus into the stomach below the diaphragm, the fluid level never rising above the cardiac orifice. The most important part of a gastrointestinal study is to keep the various conditions in mind; the fact that more physicians are looking for these lesions accounts for their apparent increased incidence during the past decade.

I wish to express my thanks to Drs. W. L. Cooke, M. I. Mendeloff, and B. S. Preston for permission to report these cases and their abstract of the histories.

REFERENCES

1. Harrington, S. W.: *Diaphragmatic Hernia Symptoms and Surgical Treatment in 60 Cases.* J. Am. Med. Assoc., 1933, Vol. 101, p. 987-994.

2. Camp, J. D., and Kirklin, B. R.: Personal communication.

COLONISTS AND DISEASE

The Negro was neither a conqueror nor a willing colonist of early America. He was a victim of the slave trade which began in Hispaniola as early as 1501 or 1503. Dr. P. M. Ashburn in part two of "How Disease Came with the White Man," in the April *Hygeia*, points out that the whites thought the Negro had a stronger constitution and realized that they were powerless to prevent the slavery of the Indians unless black slaves could be substituted.

Through the introduction of diseases to which the Indian had no immunity and the Negro had much, the former disappeared from many parts of America and the latter took his place. The mortality of the whites in those early days was also enormous. Starvation and scurvy were their great enemies.

In the sixteenth and seventeenth centuries it was the eruptive fever, such as smallpox, that devastated the Indian population and proved to be the forerunner of civilization by the Spanish, Portuguese, French and English.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Early promoters of the tuberculosis movement hoped that tuberculosis might at least be curbed. Today some are advocating that the objective should be to eradicate disease rather than merely to maintain partial control. It is a grave matter however, says Wade H. Frost, in an article in the American Review of Tuberculosis, to hold out to the public the expectation of eradicating such a disease as tuberculosis unless the expectation rests upon sufficiently solid ground. This ground he examines critically and suggests that further search be made for every item of information that might throw light on the subject. Abstracts of the paper follow.

Can Tuberculosis be Eradicated?: The most conspicuous fact in the history of tuberculosis in the last 50 years has been its steady and rapid decline in mortality. In view of the circumstances under which this has taken place and in the light of what is known of the natural history of the disease, is it reasonable to expect that the downward trend may continue indefinitely, perhaps to the point of regional suppression of the disease, or is it more reasonable to anticipate a compensating upward swing to a higher level?

The extermination of an infectious disease is not simple. This is especially true of the endemic diseases caused by obligate parasites of man transmitted directed from person to person by way of the respiratory tract. In general, the diseases of this group have shown no consistent, substantial decrease in recent years. Diphtheria and scarlet fever have, indeed, declined greatly, but it is by no means certain that this has been due largely to environmental control. Their past history shows wide variations in prevalence and severity; and, in diphtheria, specific immunization and therapy have played a part.

It seems evident that the best modern environment sets no effective barrier against the common endemic infections transmitted directly by way of the respiratory tract. It is demonstrable, in one way or another, that very few people escape infection, clinical or subclinical, and that escape from the diseases themselves must be credited more often to human resistance than to avoidance of exposure. Against such diseases specific immunization appears to be the logical method of attack, and smallpox, against which it has been applied, is the only disease of this group which has been regionally eradicated.

The belief that it is practicable completely to prevent dissemination of infection transmitted from person to person by way of the respiratory tract is no longer tenable. Therefore, if the expectation of eradicating tuberculosis rests upon complete avoidance of infection, it must needs be abandoned for the present. However, the condition necessary for eradication of an obligate parasite is not that transmission be immediately and completely prevented, but that it be lowered and held permanently below the level at which a given number of infectious hosts succeed in establishing an equivalent number to carry on the succession. If, in successive periods, the number of infectious hosts is continuously reduced, and this declining ratio is continued long enough, extermination must be the result. Within historic times many species of animals have been exterminated, regionally or entirely, by man's intervention, throwing the biological balance against them, and it is not inherently improbable that the tubercle bacillus should be similarly exterminated as the result of human interference with its propagation.

It is true that the tubercle bacillus falls in that general group of pathogens against which environmental barriers are of least effect, namely, those which enter and escape by way of the respiratory tract; but it is differentiated from the other organisms of this group by an unusual combination of conditions limiting its propagation and rendering it peculiarly vulnerable to artificial interference. These conditions are first, that in order to escape from its host it must cause a lesion which breaks through to the surface, and, secondly, that it succeeds in producing such lesions in only a limited proportion of infected persons. Various other pathogens limited to the human host are subject to one or the other of these conditions, but not to both. For instance, the virus of measles appears to be spread only from persons actually suffering from or in process of developing the eruptive disease; but it is so highly infective that it succeeds in producing this effect in nearly all persons who survive to adult age. On the other hand, the diphtheria bacillus, the pneumococcus, the virus of poliomyelitis and various other pathogens transmitted by way of the respira-

tory tract, cause clinical disease in only a small proportion of those who are infected; but actual disease is not essential to propagation of these microorganisms, since subclinical infections, being equally "open," suffice to spread them from host to host, and to perpetuate the species. The combination of the two limiting conditions is the peculiarity of tuberculosis.

Because of this combination of limiting conditions, it is reasonable to infer that tuberculosis may be reduced to an indefinitely low level, even to regional suppression, by isolation of identifiable cases and by other measures of environmental control which are ineffective in the control of numerous other diseases transmitted directly from person to person by way of the respiratory passages and this inference is broadly confirmed by the facts known about the past and present distribution of tuberculosis in different parts of the world and in different strata of the population. The fact that at the present time tuberculous infection, as distinguished from the disease, is widely prevalent is not inconsistent with this view of the controllability of the disease.

With improved measures of control which are within the limits of practicability, including better detection and isolation of open cases, with higher standards of living and personal hygiene, there appears to be no fundamental reason why tuberculosis may not be virtually eradicated from large areas in this country. While there are certain contingencies which obviously might bring about a recrudescence after the disease has reached an extremely low level, it does not appear that this result is inevitable in accordance with any accepted biological law or that it is especially to be anticipated.

Admitting that we cannot actually know the future of tuberculosis, it is none the less important that we should clearly define what are reasonable expectations in the light of present knowledge, since present activities in study and control necessarily are directed chiefly toward the future. If, as I believe, it is reasonable to anticipate control to the point of permanent regional suppression, the establishment of this as the objective has obvious and important implications as to the scope and intensity of control measures. It has less obvious but important implications with respect to indicated lines of investigation.

The Outlook for the Eradication of Tuberculosis, Wade H. Frost, Am. Rev. of Tuberc., Dec., 1935.

"T. B." HEADLINES

Behind the headlines in newspapers and periodicals announcing that the tuberculosis death rate is declining, is a story extremely important to those interested in health: One age group has not shown a comparative decrease in tuberculosis deaths. In "Behind the 'T. B.' Headlines" in the April *Hygeia,* Elizabeth Cole reveals that during the period between 15 and 19 years of age the rate has declined more slowly than for any other age period, especially among girls.

When this situation was first brought out several years ago, many educators and health workers immediately sought to place the blame on diet faddists, too thin clothing, too much "jazz" and too little sleep. The National Tuberculosis Association made an investigation in Detroit and New York City to find out about the living habits of the girls between 15 and 26 who had died from tuberculosis during a period of one year. The majority had lived in their own homes on an average family income. Industrialization had not been responsible.

The conclusion was reached that the physiologic development of the young victims must have been accountable. The strain during the growing years seems to be greater on girls than on boys.

The transitional period, when the girl becomes a woman, in certain cases affects the general health to such an extent that resistance to sickness is lowered. A realization that tuberculosis can be controlled through prevention will make parents each year more responsible in seeing that their boys and girls have regular health examinations.

LOST TEETH

There are no teeth like those which nature provides, but the imitations are good, Dr. Robert H. Brotman points out in "Store Teeth" in the April *Hygeia.*

Why should lost teeth be restored, and what happens if this is not done? In normal mouths the teeth in one jaw interlock or mesh with those of the opposite jaw. Each tooth supports the adjacent one and has at least one antagonist. Like the teeth in mechanical gears one assists the other to function in harmonious relationship. When one tooth is lost in the mouth the others must assume its duties. The entire harmonious relationship intended by nature may be disturbed, with premature loss of the teeth.

USE MODERN METHODS

Those of us particularly interested in tuberculosis are wont to point with pride—yes, and even boast—about the remarkable and steady decline in the death rate of this one-time "Captain of the Men of Death." Twenty years ago 150,000 people died in the United States of this one disease; last year only 75,000 graves were filled by the victims of this "plague"—this in spite of the increase in population during the past two decades.

A reduction from 150,000 to 75,000 deaths within twenty years certainly presents an encouraging and gratifying picture but—wait a minute—is this the entire story? It is not. Upon closer examination it will be noted that several clouds cast disturbing shadows over the otherwise pleasant bit of scenery.

These clouds in our picture represent the fact that more than one half of these 75,000 deaths from tuberculosis occur between the ages of twenty and fifty—a time when life is most valuable—when life is most useful and when life is most precious. If we add to this the statement that many, many of these lives could be saved by earlier diagnoses, our picture, at first glance so alluring, loses much of its attractiveness.

In the treatment of pulmonary tuberculosis today, modern methods in the form of some type of collapse therapy—artificial pneumothorax, paralysis of the diaphragm or thoracoplasty — are used wherever tuberculosis is treated. Are we physicians who see these patients when they first complain of symptoms, using the modern methods in attempting to establish an early diagnosis of pulmonary tuberculosis?

A detailed, searching history followed by a careful physical examination, plus repeated sputum examination, will go far to pick up many cases, but, if we aim to diagnose this serious disease in its incipiency, we must take advantage of all modern methods available. The use of the tuberculin test followed by a röentgenogram of the reactors, constitutes the only method by which small, early infiltrations can be found. The results obtained by the application of these methods to high school and college students in Wisconsin and throughout the country during the past few years leaves no doubt as to their value.

It is appreciated that the cost to the patient of an x-ray film prevents many physicians from asking for this valuable diagnostic aid, but if the tuberculin test is first used to eliminate tuberculosis as a probable cause of the symptoms, the number of cases calling for x-ray diagnosis will be materially diminished. Furthermore, it is sincerely hoped that the more frequent use of the chest film may reduce the cost to the patient so as to make it more available to greater numbers. — *Wisconsin Medical Journal.*

FIRST AID STATIONS

Miss Katherine Myers and C. H. McFarland, Chapter representative of the Red Cross visited the State Health Department this month and discussed plans for the wayside first aid stations which are being set up along the highways of the state.

These stations are being established for the purpose of rendering first aid to persons injured in automobile or other accidents. The stations are in no way to take the place of medical care, but merely to provide the necessary aid until a doctor can be obtained. It is hoped that many lives may be saved and much suffering and further serious results be reduced by this means of immediate first aid.

The stations have been set up in gasoline stations, tourist homes, wayside stores or other available places along the highways and large signs designating the places erected by the State Road Commission. The personnel is trained in Red Cross first aid and must include at least two persons. Wherever possible the Red Cross trains a class in the community so that there will be plenty of trained helpers in case of a big accident or the absence of the station's regular attendants.

Equipment for the stations must include a twenty-four unit first aid kit and a four-ring leg splint. Other equipment can be provided if desired. The cost of the first aid stations is negligible and the service rendered in reducing the toll of accidental deaths along the roads will be invaluable.

Health officers and nurses in the state will welcome the addition of these first aid stations and offer every coöperation because it ties in very definitely with their work in protecting the lives and health of the public.

QUACK "CURES"

Did those to whom quack remedies are offered to cure deafness but know the way an ear must function to hear normally, they would resent the insult to their intelligence which these "cures" present. Dr. Samuel J. Kopetzky discusses "Exploiting the Deaf" in the April *Hygeia.*

PRESIDENT'S PAGE

Since I wrote my remarks for the President's Page of the last edition of our JOURNAL, West Virginia has been visited with a terrible disaster in the form of the greatest flood in the history of the Ohio Valley, and perhaps also the Potomac Valley.

This was the time when great sacrifices were made by everybody, that the flood refugees might be properly housed, and properly fed, and that their physical sufferings might be kept to a minimum.

Perhaps the only good thing that came out of the flood was the wonderful spirit shown by the people in these devastated areas. The heroic efforts of the volunteers and of the Red Cross workers and the tremendous outpouring of money and provisions that were provided by the people untouched by the flood will go a long way to restore our confidence in the innate goodness of humanity.

It was especially gratifying to me to note that the medical profession in the State of West Virginia was equal to the occasion, and that they carried on and looked after the sick and the injured in these flooded areas as they have done in the past. Their actions have been worthy of the best traditions of our noble profession.

It was doubly gratifying to me to note that in my own section of the Ohio Valley that the real medical heroes were the young fellows in our profession. These were the ones that some of we older fellows have often discussed among ourselves and concluded that they did not have the courage and the fortitude that the older men possessed. In the time of stress and strain they came through in a manner that was equal to anything that any past generation of physicians have done.

In the future, the welfare of our medical profession will be in the hands of the ones who are now our boys. I look forward with confidence to the time when the young fellows take up the burden. They have proven themselves worthy and amply able to carry on.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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THE FAIRMONT MEETING

The sixty-ninth annual meeting of the West Virginia State Medical Association will be held in Fairmont on June 8, 9 and 10, 1936. The essential features of the program will be found elsewhere in this issue of the JOURNAL. It is sufficient to say here that the Marion county doctors are leaving no stone unturned to make the Fairmont meeting one of the finest in the history of the Association. Their plans for the entertainment of the visiting doctors and their wives should make the Fairmont meeting one that will be remembered for a long time to come.

There has been a general feeling throughout the state that the hotel facilities at Fairmont are not sufficient to accommodate a convention as large as ours. This situation has been partly if not wholly remedied. In recent months the Fairmont Hotel has taken over the management of the other two Fairmont hostelries, they have been placed in first-class condition, and there are now approximately 400 convention rooms available for the coming meeting. All requests for reservations should be sent direct to the Fairmont Hotel where all rooms will be assigned.

Perhaps a brief review of the convention routine is in order. All sectional and general sessions will be held in the Fairmont Hotel. The Sections on Surgery and Pediatrics, and the West Virginia Heart Association will meet on Monday morning, June 8. The Sections on Internal Medicine, and Eye, Ear, Nose and Throat will meet on Monday afternoon, June 8. The first meeting of the House of Delegates will be held on Monday evening, June 8. The general sessions will open on Tuesday morning, June 9 and will continue through Tuesday afternoon, Wednesday morning and Wednesday afternoon. The presidential address will be delivered on Tuesday evening, after which the House of Delegates will again convene for the election of officers. The annual convention banquet and ball will be held at the Fairmont Hotel on Wednesday evening.

The annual meeting of the West Virginia Society of Obstetricians and Gynecologists and the West Virginia Society of Industrial Physicians and Surgeons will meet on Thursday morning, June 10.

All general and business meetings of the Woman's Auxiliary will be held in the Red Cross building across the street from the Fairmont Hotel. Auxiliary registration will be conducted there. The registration desk for Association members and guests will be on the mezzanine floor of the Fairmont Hotel.

One of the features of the Fairmont convention will be the dedication of the Founders' Monument at Rivesville on Tuesday afternoon, June 9. Dr. C. O. Henry, Fairmont, and Dr. T. M. Hood, Clarksburg, are in charge of the dedication exercises. The monument was erected by the Association and Rivesville (six miles north of Fairmont) was selected as the site because this was the home of Dr. James E. Reeves, first secretary and prime mover in organizing the West Virginia State Medical Association at Fairmont on April 10, 1867.

MICHAEL DAVIS vs. MORRIS FISHBEIN

On March 5, 1936, the League for Political Education, Inc., and the National Broadcasting Company arranged a debate on the America's Town Meeting program on the subject, "Health Security and the American Public." One view was presented by Dr. Michael M. Davis, director of the Julius Rosenwald Medical Service Fund of Chicago. The opposite view was presented by Dr. Mor-

ris Fishbein, editor of the *Journal of the American Medical Association.*

While the debate was much too long to reprint in these columns, certain passages, both by Dr. Fishbein and Dr. Davis are worth of special mention. We refer particularly to the Open Forum during which questions were asked of both debaters. We quote, in part, from these questions and answers.

Question (to Dr. Davis). How can socialized medicine be kept free from political graft?"

Dr. Davis: "I wish I knew."

Question (to Dr. Fishbein). If a person makes a small salary, just enough to supply his family, how can you force him to deduct from his salary for insurance and medicine?

Dr. Fishbein: "That, of course, is just the kind of question I would like to have answered, but I happen to know in other countries the government just takes it away from him and he lives on a lower level.

In this country, we do not have that. In this country we attempt, of course, to get adjustments in wages with the understanding that if the man is intelligent, he will save for medical and dental care. When they tell you by such deductions they are going to be able to give everybody the best of medical care and dental care, just simply tell them that it can't be done, because the average family in the United States with an income of $2400 a year or less spends $2.35 a year on dental care and the average family in the United States with an income of $10,000 a year or over, spends $135 a year on dental care, and if we tried to give every family $135 a year for dental care, they would all have fine teeth and nothing to eat with the teeth."

The Davis-Fishbein debate is well worth reading by any physician. It is, in our humble opinion, a complete vindication of the position of the organized medical profession. The above is only a sample. Pamphlet copies of the debate may be secured for 10 cents by writing the American Book Company, 88 Lexington Avenue, New York City.

PRIVY DEDICATION

We pause to congratulate the State Health Department upon the completion and successful dedication of its one hundred thousandth privy. Little was said in the state press relative to the dedicatory exercises, other than such exercises were held near Clarksburg on April 16 with many prominent dignitaries in attendance. We regret the lack of more complete details. Privy dedicating is a new art. There are no precedents from the musty past to throttle the initiative of the dedicators. We would like to know more about the speeches; the routine. Was the one hundred thousandth privy unveiled? If so, who pulled the string?

The thought of a privy dedication (particularly the one hundred thousandth privy) is one to bring a sly twinkle of humorous understanding to the eye. And yet the building of sanitary pit privies in West Virginia was far from a humorous business. It was, and still is, business on a large scale. The privy building project, inaugurated in 1933, has already brought about a marked decline in the morbidity and mortality rates from filth-borne diseases.

To be more specific about the accomplishments of the privy project, the death rate from typhoid fever per 100,000 population has dropped from 7.7 to 5.2. Diarrhea and enteritis in children under two years of age has dropped from 32.2 to 23.0. A few years prior to the inauguration of the privy project the typhoid death rate was 12.2. Morbidity rates have shown similar declines. So it is little wonder that our state and county health dignitaries turned out to pay a just tribute to the completion of the one hundred thousandth privy on April 16.

A few words more about the privy program. First, it seems that there are 140,000 privies yet to be constructed. Second, West Virginia has led all other states in privy building and has won national recognition for her sanitary enterprise. We hope our State Health Department will continue to push forward its privy building department until the entire program is completed. So far as West

Virginia is concerned, it seems that the day of Chic Sale's "Specialist" is at hand.

DIRECTORY RACKETS

At a recent meeting of the Marion County Medical Society, a resolution was unanimously carried which recommended that members of the society refuse, under any and all circumstances, to allow their names to be published in commercial directories. We compliment the Marion Society on its excellent judgment.

There are several variations of the directory racket. The one thing they all have in common is the payment of a substantial fee (usually $15) for including a doctor's name, specialty and address. Most of the commercial directories claim that they use only the names of the leading specialists in each city or town. Hence a compliment is implied. So if a doctor is asked to buy space in a commercial directory he not only gets a nice compliment for his $15, he also gets his name listed where it may be found by someone, somewhere, who just happens to be looking for the chief specialist in his line in his particular city.

We have before us one of the recent commercial directories published by a middle west company. We are glad to note that, in addition to the doctors, it carries the names of several hundred attorneys who are, we suppose, just as gullible as the medical profession. This particular publisher, who publishes the directory which we are now perusing, does not state from what source the appointment was received to select the leading specialists of the country.

The above-mentioned directory carries the names of approximately five thousand physicians who, at $15 per throw, contributed some $75,000 toward its publication. A rough, though liberal, estimate of the cost of the publication would run around $10,000. This directory is published once each year. Who gets the remaining $65,000 we do not know. The solicitors probably get $25,000, but that still leaves a healthy cut for somebody.

The good doctors of Marion county must have figured the racket out for themselves and followed up their deductions with prompt action. They are to be congratulated. We hope more county societies will take this matter under consideration.

POSITION OPEN

Not being one to easily pass up interesting correspondence that comes over the editor's desk, we wish briefly to call attention to a recent communication from the New York Marine News Company of 26 Water Street, New York City. The letter states that this company is very anxious to secure a representative to sell advertising in this locality for their trade publication.

The letter continues, "He will call on towboat owners and operators, bunker coal and oil dealers, ship chandlers, stevedores, custom house brokers, marine underwriters, salvagers, naval architects, divers and marine engineers."

We are glad to carry this bit of information for interested members, harboring, as we do, a feeling of neighborly affection for a brother trade-journal editor.

THE A. M. A. MEETING

No doubt a number of members of our State Society who are subscribers to the *Journal of the American Medical Association* will travel to Kansas City for the 1936 A. M. A. Session, May 11 to 15, 1936, only to be confronted at the registration window with the statement that they are not eligible to register because they are not Fellows of the A. M. A.

All members of our county and state medical societies are members of the American Medical Association, *but only those who have made formal application for Fellowship and paid the subscription price for the Journal of the A. M. A. are Fellows.*

Any member who is not a Fellow may make use of the application blank published elsewhere in this issue of the JOURNAL, forwarding it at once to Secretary Olin West, 535 N. Dearborn St., Chicago, Illinois.

COUNTY SOCIETY NEWS

BARBOUR-RANDOLPH-TUCKER

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held at the Y. M. C. A. building in Elkins on the evening of April 23, 1936. Delegates to the state meeting in Fairmont were elected, after which the DeLee film on "Obstetrics" was presented. Dr. J. L. Miller, president, presided.

RUSSELL S. WOLFE, *Secretary.*

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of April 9 with a good attendance. The essayist of the evening was Dr. Charles M. Caravati of Richmond, who gave a splendid lecture on "Medical Conditions Relieved by Surgery." His paper was discussed by many of the members present.

Dr. W. F. Daniels of Huntington was admitted to membership. It was announced at this meeting that the Cabell Society would again have a booth showing its School Health Program work at the American Medical Association meeting in Kansas City.

A considerable number of members of the Cabell County Medical Society were guests of the Cabell County Dental Society at the Pritchard Hotel on the afternoon of April 21 to hear Dr. J. W. Homberger, Professor of Physiological Chemistry and Nutrition of Louisville Medical College.

CHAUNCEY B. WRIGHT, *Secretary.*

GREENBRIER VALLEY

The April meeting of the Greenbrier Valley Medical Society was held at the Greenbrier Hotel, White Sulphur Springs, on April 15 at which time Dr. H. L. Goodman of Ronceverte read a paper "Carcinoma of the Cervix" which was thoroughly enjoyed.

Dr. J. W. DeVebre of Ronceverte was elected to honorary membership at this meeting and the following doctors were elected to membership: Dr. A. E. LeHew, Lewisburg; Dr. McCauley of Rainelle and Dr. J. Brown of Alderson. Dr. W. E. Myles of White Sulphur Springs and Dr. A. G. Lanham were elected delegates to the Fairmont meeting with Dr. E. W. Hoylman of Dorr as alternate.

A. G. LANHAM, *Secretary.*

HARRISON COUNTY

The Harrison County Medical Society held its regular monthly meeting on April 2 at the Stonewall Jackson Hotel, Clarksburg. Dr. C. G. Morgan of Moundsville, president of the State Association, was present and spoke on "Economic Trends in Medicine in West Virginia," which was liberally discussed by the members present.

Dr. Thomas G. Harris of West Milford presented a "Review of the Life of Noguchi." Dr. Harris became personally acquainted with Dr. Noguchi when he first came to the United States.

CREED C. GREER, *Secretary.*

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of April 14 with Dr. Ray Kessel, president, presiding. The scientific program was furnished by Dr. Vernon Peterson of Charleston with a paper on "The Roentgen Diagnosis of Childhood and Adult Tuberculosis of the Lungs."

A number of business matters were disposed of, following which Mr. Dewey Kuhns of the Charleston Retail Credit Bureau discussed a proposed plan of credit service for Charleston physicians.

Delegates to the Fairmont meeting were elected as follows: Dr. P. A. Haley, II, Dr. Thomas G. Reed, Dr. P. A. Tuckwiller, Dr. R. K. Buford, Dr. Claude B. Smith, Dr. M. F. Petersen, Dr. Paul Revercomb and Dr. Russel Kessel. Alternates are Dr. A. E. Amick, Dr. Francis Clark, Dr. B. S. Preston, Dr. R. H. Dunn, Dr. Ray Kessel, Dr. J. W. Moore and Dr. A. P. Hudgins.

P. A. HALEY, II, *Secretary.*

LEWIS COUNTY

A most interesting meeting of the Lewis County Medical Society was held at the Camden Hotel, Weston, on the evening of April 14 at which time the doctors and their wives convened for a dinner meeting. Dr. Ralph Fisher, president, presided, and the guest speaker of the evening was Dr. C. G. Morgan of Moundsville, president of the West Virginia State Medical Association. Dr. Morgan gave a splendid address on "Medical Practice in West Virginia."

Other speakers included Dr. W. S. Fulton of Wheeling, Dr. T. M. Hood of Clarksburg, and Mr. Joe W. Savage, state secretary, of Charleston. There was an unusually fine attendance for this meeting.

THERESA O. SNAITH, *Secretary.*

LOGAN COUNTY

The Logan County Medical Society held its April meeting on the evening of April 8 at the Mercy Hospital, Logan, with 19 members and six visitors in attendance.

Dr. Martin L. Bonar of Charleston gave an interesting talk on "Allergic Skins" and also held a short clinic on skin diseases, the patients being sent in by several members. Dr. A. A. Shawkey of Charleston spoke on "Summer Diarrheas as We See Them." This talk was very appropriate, due to the fact that Logan's death rate from diarrhea is high.

Guests of the evening were Miss Eloise Shawkey, daughter of Dr. Shawkey and a medical student, Dr. Shawkey and Dr. Bonar, Dr. H. D. Hatfield, Dr. Edwin Matthews and Dr. Whitlock.

The society adopted the following resolution, a copy of which was sent to the Governor:

"*Be it Resolved,* That the Logan County Medical Society favors the conversion of the Welch Emergency Hospital into an institution for the treatment and care of tuberculosis patients."

The March meeting of the society was held at the Logan General Hospital with 17 members and two guests present. Dr. W. E. Hoffman, Charleston, spoke on "Toxemias of Pregnancy." Dr. Emory V. Jordan, Charleston, read a paper on "Malignancy of the Prostate." After an informal discussion of both papers, a buffet luncheon was served.

DANA T. MOORE, *Secretary.*

MARION COUNTY

The regular monthly meeting of the Marion County Medical Society was called to order on the evening of February 25 at the Fairmont Hotel with Dr. C. L. Parks presiding. There were 30 members present and the meeting was given over to the appointment of committees and making arrangements for the coming state meeting in Fairmont on June 8-10, 1936.

The March meeting of the society was called to order by Dr. J. B. Clinton at the Fairmont Hotel on the evening of March 31 with 27 members and guests in attendance. The speaker of the evening was attorney Harry Cronin of Fairmont who gave a very interesting and instructive talk on the "Medico-Legal Aspect of Autopsies."

During the business session, the society went on record as favoring a law for compulsory immunization of children of pre-school age. The society also went on record as opposing the inclusion of names of society members in any of the so-called private directories of physicians. A committee consisting of Dr. G. V. Morgan, chairman; Dr. W. A. Welton and Dr. Philip Johnson was appointed to investigate WPA fee schedules in the county.

A. H. STEVENS, *Secretary.*

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held in the Memorial Building, Princeton, on February 20. The minutes of the last meeting were read and amended to read that delegates elected were for a two-year term. Dr. J. L. Hundley was elected to membership and Dr. W. C. Slusher was reelected to membership.

Following this a very interesting paper on "Fractures of the Lower Extremities" was presented jointly by Drs. O. H. Fulcher and Wilson of Grace Hospital, Welch. A very fine discussion by Dr. Dean Hosmer followed.

Following the regular meeting, the society and some of the wives of the members were very delightfully entertained at a buffet supper at the home of Dr. and Mrs. James Vermillion.

CHAS. T. ST. CLAIR, *Secretary.*

MINGO COUNTY

The March meeting of the Mingo County Medical Society was held in the Mountaineer Hotel, Williamson, on the evening of March 24 with Dr. L. F. Boland, president, presiding. During the business session it was reported that uniform fees for men doing contract work had been established to the satisfaction of the profession. The application for membership of Dr. S. M. E. Simon of Williamson was presented and referred to the Board of Censors.

Following the business session there was a general discussion of cerebrospinal meningitis which was participated in by all members present.

The April meeting was held at the Mountaineer Hotel on April 8 with Dr. L. F. Boland, president, presiding. A number of interesting cases were reported and discussed, after which Dr. J. C. Lawson, Williamson, presented a most interesting paper on "Eclampsia." Mr. Joe W. Savage, state secretary, was present and talked on medical economics in West Virginia.

The society voted unanimously to accept the report of the Board of Censors rejecting the membership application of Dr. S. M. E. Simon.

GEORGE W. EASLEY, *Secretary.*

MONONGALIA COUNTY

The regular monthly meeting of the Cabell County Medical Society was held in the Green Room of the Hotel Morgan, Morgantown, at six o'clock on the evening of April 7 with a splendid attendance. Dinner was served to the members and guests present, following which Dr. R. R. Snowden of the Pittsburgh Diagnostic Clinic, Pittsburgh, gave a most interesting paper on "The Anemias."

G. R. MAXWELL, *Secretary.*

OHIO COUNTY

The thirteenth regular scientific meeting of the Ohio County Medical Society was held on the evening of April 3 at the Ohio Valley General Hospital with Dr. Russell Bond, president, presiding. Resolutions of respect were read by the secretary in memory of Dr. J. T. Carter and Dr. John Plumer Cole, deceased. The secretary also read a joint report filed by the officers of the society covering the activity of the society during the recent flood.

The paper of the evening was presented by Dr. Vernon Peterson of Charleston, röentgenologist of the Charleston General Hospital. He discussed chronic diseases of the lungs, particularly tuberculosis, silicosis and asbestosis. He described in some detail the pathological changes which lead to the production of the shadows which the röentgenologist is called upon to interpret. The paper was well and profusely illustrated by lantern slides. Dr. Peterson very kindly came to Wheeling on short notice to substitute for Dr. Charles Dean of Columbus who was unable to appear due to the development of an acute pleurisy.

Dr. Peterson's paper was discussed by Drs. W. K. Kalbfleisch, Edward Phillips, M. Gaydosh, Andrew Wilson and Dr. Krupp from Martins Ferry, Ohio. There were 45 members and guests present.

W. M. SHEPPE, *Secretary.*

PARKERSBURG ACADEMY

The regular monthly meeting of the Academy of Medicine of Parkersburg was held in the Camden-Clark Memorial Hospital, Parkersburg, on the evening of April 2, with Dr. H. H. Veon, president, presiding. During the business session, Dr. R. H. Wharton, Dr. R. H. Boice and Dr. B. B. Nicholson were elected as delegates to the Fairmont meeting with Dr. B. O. Robinson and Dr. A. M. Dearman as alternates.

The speaker of the evening was Dr. M. A. Blankenhorn, Professor of Medicine, University of Cincinnati, who gave a most interesting and instructive lecture on "Chronic Alcoholism and Pellagra," illustrated with many lantern slides. The paper was discussed by Drs. H. M. Campbell, S. M. Prunty and A. M. Dearman.

Following the scientific program a buffet supper was served by members of the nursing staff of the hospital. There were 39 members and guests in attendance.

BERLIN B. NICHOLSON, *Secretary.*

RALEIGH COUNTY

The regular meeting of the Raleigh County Medical Society was held at the Beckley Hotel, Beckley, on the evening of March 25 with 34 members and guests in attendance. During the business session, Dr. Olga Bonke Booher and Dr. John W. Bolen of Beckley were admitted as new members.

The scientific program was presented by Dr. W. W. S. Butler, urologist of the Jefferson Hospital, Roanoke, Virginia, and Dr. Hugh Trout, surgeon, of the same institution. Dr. Butler spoke on "Carcinoma of the Prostate" and Dr. Trout on "Carcinoma of the Breast." This was a most interesting and instructive symposium.

L. M. HALLORAN, *Secretary.*

DISEASE BULLETIN

The State Health Department has received the first copies of the recently revised bulletin on the Control of Communicable Diseases. The bulletin was prepared particularly for use by physicians, teachers, parents and also as a basis for study by clubs and other groups.

It contains the rules and regulations of the Public Health Council with regard to the reporting of communicable diseases, placarding of homes and quarantine measures for the protection of the health of the public. Detailed information is given regarding a number of the forty communicable diseases which physicians are required to report to the local, county or city health officer. This information includes sources of infection, modes of transmission, period of communicability and the latest methods for controlling the disease.

An appendix has been added to the bulletin which gives specific information on the procedure for laboratory diagnosis and collection of specimens.

The bulletin is for free distribution.

OBITUARIES

DR. JOHN PLUMER COLE

Dr. John Plumer Cole, 63 years of age, died at his home in Wheeling of coronary occlusion on March 4, 1936. Dr. Cole was a graduate of the class of 1909 of the College of Physicians and Surgeons, Baltimore. He specialized in obstetrics and gynecology and was one of the most prominent physicians of Ohio county. The Ohio County Medical Society passed the following resolution in his memory:

The Ohio County Medical Society has suffered another severe loss in the passing of Dr. John Plumer Cole, for many years an active and valued member. It is fitting that we attempt to express our sorrow and deep regret.

Dr. Cole was born at Marietta, Ohio, on February 5, 1873. He spent his youth in that vicinity. He attended the public schools of Marietta. Later on, he enrolled in Marietta College from which institution he graduated in 1894. He was a member of the Alpha Sigma Phi fraternity. Dr. Cole obtained his medical education at the College of Physicians and Surgeons in Baltimore, Md. He received the degree of Doctor of Medicine in 1903, and spent the next two years at the University Hospital in Baltimore. Somewhat later, he began private practice in the City of Baltimore, but when his office and office equipment were burned, he moved to Wheeling.

For thirty-one years, Dr. Cole practiced medicine in our community. For over twenty years, he has lectured in the nursing school of the Wheeling Hospital. He has been a member of the staff of the Wheeling Hospital ever since its organization. Dr. Cole was married on April 25, 1928. His wife, who survives him, was formerly Miss Nell B. Crow of Pittsburgh, Penna.

Dr. Cole's educational training fitted him well for an active career in the practice of medicine. Those of us who knew him intimately recognized his outstanding ability both in surgery and internal medicine. He was honored as a talented physician by a host of friends. His forceful and dignified personality commanded the respect of his professional brothers. His genial smile and his cordial attitude endeared him to a multitude of friends among laymen as well as the medical fraternity.

The passing of John Plumer Cole leaves a big vacancy in the roster of our society. We who survive him wish to pay this tribute to him as a man and a physician. We desire to express our deepest sympathy to his two brothers, his two sisters and his wife in their bereavement, and request that a copy of this resolution be forwarded to his family after it has been inscribed upon the records of our society.

DR. ALEXANDER IRVINE

The following resolution was passed at the last meeting of the McDowell County Medical Society in tribute to Dr. Alexander Irvine, who died of a heart attack on January 14, and whose obituary was published in the February JOURNAL:

WHEREAS, After four decades of faithful devotion to the healing art, Dr. Alexander Irvine, McDowell, W. Va., has been called to his reward by The Great Physician, and

WHEREAS, We, his fellow members of McDowell County Medical Society, revered him and esteemed him not only because he was one of the pioneer physicians in the Norfolk and Western coal fields, not alone because he was the first superintendent and surgeon in charge of Miner's Hospital No. 1 (now Welch Emergency Hospital), nor again alone because of his brilliancy of mind and his original contributions to the art of the practice of medicine, but because of his kindly ethical spirit towards his fellows and his faithful devotion to the healing art,

Therefore, Be it Resolved, That we now do homage to him for his life's work of unselfish service among us in behalf of suffering humanity;

That we formally extend our heartfelt sympathy to his bereaved relatives, commending them to the sustaining grace and healing compassion of The Great Physician;

That we authorize this expression of our sentiments to be officially conveyed to them, spread upon the minutes, and sent to THE WEST VIRGINIA STATE MEDICAL JOURNAL.

DR. FRANK L. BAKER

Dr. Frank L. Baker, honorary member of the Grant-Hardy-Hampshire-Mineral County Medical Society, died at his home in Burlington on March 24, 1936, at the age of 75 years. Dr. Baker retired from active practice several years ago. He was one of the most loved and best known physicians of Mineral county where he practiced more than 30 years.

Dr. Baker was born in 1861. He graduated in 1889 from the College of Physicians and Surgeons,

Baltimore. He came to West Virginia in 1900 and located in Mineral county, where he continued in private practice until a few years before his death.

COST OF MEDICAL CARE

Upholding the continuous contention of this journal that the money spent in "the high cost of medical care" goes to everybody but the doctor please note this quote from the *Journal of the Missouri State Medical Association* in which Dr. E. Lee Miller of Kansas City, Mo., remarks:

"That it costs too much to be sick is true. The sick services that can be thus indicated are the high cost of hospital and nursing service which we all admit is at times necessary but where charges have become excessive. Nearly every physician can subscribe to an experience like this. The patient is a cholecystectomy candidate and wants and needs some careful watching, so a trained nurse is called. The period of convalescence is two weeks. A private room costs $84; operating room, $15; laboratory, $5; drugs and dressing, $15. Two nurses at $42 per week each cost a total of $168; so it is plain to be seen that if the patient is a very sick man it costs him $287 before he has one penny available with which to pay a consultant, an anesthetist or surgeon. Let us say that the surgeon charges $150; the anesthetist $15 and the consultant $50 for a trip away from home to the hospital. *Then the cost of all three of the doctors is less than the cost of the nurses alone!* And can any layman even dare believe that the physician are not the most valuable contribution to the patient's welfare? And what manner of patient is it who comes in from the farm to town and to a hospital, who has $452 available for such a financial outlay? Could even a foundation indict the doctor for overcharging when with $287 spent before the doctor's fees are even considered, the doctor's charge is less than the nursing expenses? Hospital cost is high and nursing service with the now adopted twelve-hour duty is being paid a sum that depression patients can not stand long. It is true that the nurse is invaluable in many cases but in times like these her charges are severe. The physician gets no remuneration until all these other service obligations are met. How many people in the average community can meet a cost of $452 without difficulty? The doctor is only one-third of the cost of being sick in a hospital and usually the last third to be paid. It is not the doctor's charge that accounts for the high cost of being sick, and at present he receives only one-third of the cost. His services are easily worth two-thirds of the cost of being sick. Certainly he is worth as much to a patient as a nurse. If nursing and hospital charges continue to mount, the physician must eventually find some other type of service to meet his patient's needs. This is a grave problem that must be handled by the physician of tomorrow. He should not be further limited by law to regulate his already too meager compensation for the value of the services he performs cannot be eclipsed. The medical profession welcomes aid in a fair solution of this problem but reasonably resents the indictment that we are overpaid."—*Illinois Medical Journal.*

PUBLIC HEALTH NEWS

MENINGITIS SITUATION

A number of scattered cases of spinal meningitis in the southeastern section of West Virginia have been reported to the State Department of Health. These reports, said Dr. A. M. Price, director of communicable diseases for the State Health Department, are not uncommon for this time of year, and the fact that only two cases were reported for the week ending February 1, as compared to the eight cases for the week preceding and eleven cases for the same period in 1935 shows there is no particular reason for alarm.

Dr. Price stated that all cases as well as all persons who have been exposed should be quarantined for at least fourteen days, or longer, if there is any danger of communicating the disease to others. All public gatherings such as Sunday schools, churches, theaters, and general meetings of any kind should be discontinued when the disease becomes epidemic in a community. Before patients are released from a quarantine by health authorities the home should be thoroughly cleansed.

Individual control methods help in lowering the spread of the disease, said Dr. Price. He suggested avoiding crowds whenever possible, covering the nose and mouth when sneezing and coughing, the use of one's own drinking cup and towel, and taking of moderate exercise but the avoidance of chill or body fatigue. The public is urged to stay away from homes where cases, contacts or "carriers" are quarantined. Cooperation with health authorities in the enforcement of quarantine and the above regulations will help to control the disease.

GENERAL NEWS

THE FAIRMONT MEETING

With the sixty-ninth annual meeting of the West Virginia State Medical Association at Fairmont less than six weeks away, plans for the convention, including both program and special features, have been completed and will be published in full in the June issue. Prior to the publication of the official program, the Committee on Scientific Work has announced the following program features.

Among the leading out-of-state essayists on the Fairmont program will be: Dr. Frank H. Lahey, Boston; Dr. Charles L. Scudder, Boston; Dr. Lawrence Royster, University, Virginia; Dr. George Livermore, Memphis; Dr. Warren T. Vaughan, Richmond; Dr. George Ulrich, Philadelphia; Dr. Arthur M. Fishberg, Philadelphia; Dr. J. Homer McReady, Pittsburgh.

Association members who will appear before the general session include Dr. Russell B. Bailey, Wheeling, who will deliver the Oration on Surgery, and Dr. F. C. Hodges, Huntington, who will deliver the Oration on Medicine. Other state men on the program will be: Dr. Claude Smith, Charleston; Dr. M. H. Porterfield, Martinsburg; Dr. R. H. Wharton, Parkersburg; Dr. Howard T. Phillips, Wheeling.

The sectional programs, which will be held on Monday, June 8, will be made up almost entirely of Association members. The Sections on Surgery and Pediatrics will be held on Monday morning and the Sections on Internal Medicine and Eye, Ear, Nose and Throat will be held Monday afternoon.

The dedication ceremony for the Founders' Monument at Rivesville will be held on Tuesday afternoon, June 9, at 4:30 o'clock. Dr. T. M. Hood, Clarksburg, chairman of the Monument Committee, will preside as chairman of the exercises and will officially present the Monument to the Association. Dr. Charles G. Morgan, state president, will make the acceptance address. Three-minute talks will then be made by Dr. C. H. Maxwell, Morgantown; Dr. C. O. Henry, Fairmont, and Dr. R. J. Reed, Sr., Wheeling, who were instrumental in securing the monument's erection. The principal address will be delivered by Dr. R. H. Walker, Charleston, immediate past president of the Association.

The meetings of the House of Delegates will be held on Monday and Tuesday evenings, the first for reports and routine business; the second meeting for unfinished business and the election of officers for 1937. The Association Council will meet on Monday afternoon, June 8, and thereafter as occasion may demand.

The annual golf tournament will be in charge of Dr. S. S. Hall and Dr. G. V. Morgan. The tournament will be played on Tuesday and all handicaps must be certified. One of the sports features of the Fairmont meeting will be the inauguration of a trap-shooting tournament and skeet-shooting contest.

Dr. Charles A. Scudder of Boston will be the chief speaker at the meeting of the West Virginia Society of Industrial Physicians and Surgeons on Thursday morning, June 11. The meeting will be held in the Fairmont Hotel.

Dr. George Alvin Ulrich of Philadelphia is to be the guest speaker at the meeting of the West Virginia Society of Obstetricians and Gynecologists which will be held in the Fairmont Elks' Club on Thursday morning, June 11. His subject will be "Breech Presentations."

KANSAS CITY BROADCASTS

For those who are unable to attend the annual meeting of the American Medical Association at Kansas City, broadcasts during the session will be carried by both the National Broadcasting Company and the Columbia Broadcasting System. The schedules follow:

NATIONAL BROADCASTING COMPANY

The following programs will be delivered over a network of the National Broadcasting Company:

May 11, 4:30 p. m.: "Nutrition and the Future of Man," by Dr. James S. McLester, president of the American Medical Association. Fifteen minutes.

May 12, 4 p. m.: Medicine Marching Forward. The regular dramatized program Your Health (originating in Chicago), based on papers or exhibits presented at the convention. Thirty minutes.

May 13, 12 noon: An interview about the Scientific Exhibit with Dr. Morris Fishbein. Fifteen minutes.

COLUMBIA BROADCASTING COMPANY

The following programs will be broadcast over a network of the Columbia Broadcasting System:

May 11, 1:30 p. m.: An interview with one or more distinguished foreign visitors by Dr. Morris Fishbein. Subject to be announced. Fifteen minutes.

May 15, 2 p. m.: A news broadcast outlining

the main events of the convention. Dr. W. W. Bauer. Fifteen minutes.

May 15, 8:45 p. m.: Medicine Yesterday and Today. A dramatized program (originating in Chicago), based on papers or exhibits presented at the convention. Thirty minutes.

The hour given is central standard time; eastern standard time is one hour later, mountain time one hour earlier, and Pacific time two hours earlier.

The American Medical Association broadcasts over WEAF, the Red network instead of the Blue, as formerly, and certain additional stations of the National Broadcasting Company at 5 p. m. eastern standard time (4 o'clock central standard time, 3 o'clock mountain time, 2 o'clock Pacific time) each Tuesday, presenting a dramatized program with incidental music under the general theme of "Medical Emergencies and How They Are Met." The title of the program is "Your Health." The program is recognizable by a musical salutation through which the voice of the announcer offers the toast "Ladies and gentlemen, your health!" The theme of the program is repeated each week in the opening announcement, which informs the listener that the same medical knowledge and the same doctors that are mobilized for the meeting of grave medical emergencies are available in every community, day and night, for the promotion of the health of the people. Each program will include a brief talk dealing with the central theme of the individual broadcast.

PUBLIC HEALTH MEETING

The sixty-fifth annual meeting of the American Public Health Association will convene in New Orleans on October 20-23, 1936. Officials from the various branches of federal, state, city and county health departments, together with other agencies active in disease prevention, will be in attendance. Dr. Thomas A. Parran, Jr., surgeon general of the United States Public Health Service, is president-elect of the Association. Further information may be secured by writing the national headquarters at 50 West 50th Street, New York City.

A. M. A. MEETING

The annual meeting of the American Medical Association at Kansas City on May 11-15, 1936, is expected to attract one of the largest gatherings of medical men in the history of the parent organization. The extensive program is one of the best and most varied in recent years. With the rapid improvement of economic conditions, doctors who for the past several years have been unable to get away are expected in vast numbers.

One of the interesting sidelights of the A. M. A. session will be the twenty-second annual tournament of the American Medical Golfing Association which will be played at the Mission Hills Country Club and the Kansas City Country Club in Kansas City on Monday, May 11. Thirty-six holes will be played in competition for 70 prizes and a total of nine events.

A large number of West Virginia doctors have already made reservations for the Kansas City Convention.

GOITRE ASSOCIATION

The next annual meeting for the American Association for the Study of Goitre is scheduled for Chicago on June 8, 9 and 10, 1936. Among the distinguished essayists on the program will be Dr. J. B. Collip, Montreal; Dr. Willard Owen Thompson, Chicago; Dr. John D. J. Pemberton, Rochester, Minnesota; Dr. Frederic A. Coller, Ann Arbor; Dr. Henry S. Plummer, Rochester, Minnesota; Dr. Frank H. Lahey, Boston, and Dr. Alfred H. Noehren, Buffalo, New York.

MATERNAL INSTITUTES

West Virginia has been fortunate in having two maternal health institutes during February, one at Huntington, February 17-19, and the other at Wheeling, February 24-26. Both were under the instruction of Miss Anita Jones from the Maternity Center Association, New York City.

Quite a number of nurses from the various fields of nursing took advantage of this opportunity to learn the latest techniques and methods of teaching. Weather prevented a number of nurses who had planned to take this course from attending.

RHEUMATIC DISEASE CONTROL

The American Association for the Study and Control of Rheumatic Diseases is holding its fifth conference on rheumatic diseases at the Phillips Hotel, Kansas City, on May 11 at 9 o'clock a. m., during the A. M. A. meeting. Among the principal speakers will be Dr. Russell Haden, Dr. Joseph L. Miller, Dr. Willis C. Campbell, Dr. C. H. Slocumb, Dr. Frank D. Dickson and Dr. William J. Kerr.

FROM NEIGHBOR JOURNALS

AUTOMOBILE TRAFFIC DEATHS

According to the *Associated Press* as of Feb. 27, the first month's report of traffic deaths since the inauguration of a 5-year nation-wide campaign to reduce accidents showed a four per cent increase over January, 1935, but a nine per cent drop from 1934.

The National Safety Council states that there were 2,570 deaths in January against 2,470 a year ago, but cited the all-time January high of 2,807 in 1934. There were 532,720 accidents in 1935; 125,840 of the drivers involved did not have the right of way, and 121,400 were exceeding the speed limit.

Council spokesmen laid the increase in the death rate to hazardous driving conditions which prevailed in most states following rain, snow, and sleet storms and reiterated their belief that the drive to reduce the fatalities 35 per cent by 1941 would succeed.

The movement began January 1, 1936, after the automobile death toll reached a peak of 36,400 in 1935.

One hundred and twenty-five million dollars' worth of accident prevention will be built into the nation's highways this spring and summer.

Uniting in the country-wide effort to cut down motor deaths, federal and state governments have earmarked one-fourth of the cost of a record road improvement program to safety measures.

Of an estimated total expenditure of $600,000,000, $125,000,000 will go toward cutting down automobile crashes by eliminating railroad grade crossings, installing warning signals at danger points, widening "shoulders" of highways, broadening or eliminating curves, leveling concrete headwalls of culverts, increasing highway widths, flattening slopes, laying dustless road surfaces and increasing sight distances in order to remove mental as well as physical hazards of motorists.

Several states plan special highway safety programs. Pennsylvania will paint yellow lines through the middle of mountain roads to guide drivers through heavy fog.

What is being done in the meantime to penalize the thoughtless and careless, and drunken drivers? —*Pennsylvania Medical Journal.*

ARE WINES A FOOD?

According to legislation recently adopted in Georgia and North Caroline, wines have been taken out of the liquor class, which frees them from regulations, restrictions, and taxes now imposed on the manufacture and sale of distilled spirits.

Legislation of this type should encourage the manufacture of wholesome domestic wine which could be sold for appreciably less than the present market price of the same commodity.

According to the *New York Times*, Mr. Paul Garrett, dean of American winegrowers, avers that classifying table wine as a food would not be stretching the truth. He states that table wines are judged for their merits, taste, appearance, aroma, and effect on digestion, which effect is not due to alcohol but to the fine acids developed in fermentation and aging.—*Pennsylvania Medical Journal.*

DEMAND FOR SPEED

There are indications that the automobile-buying public may be in the mood to consider other advantages in lieu of high speed. The decrease in motor car advertising of emphasis on speed since the wide publication of "—And Sudden Death" suggests that manufacturers already recognize a change in attitude.

It would be of value to determine accurately the car buyer's attitude in this regard—his preference if given a clear-cut choice between a model capable of high speed and one with the advantages obtainable were the speed definitely reduced.

Surely automotive engineers could meet and could draw, with figures and facts, distinct pictures of these two models, could bring out clearly differences in initial, operating, and maintenance costs, in durability, and in other important factors.

The result of such a poll at least would be interesting. Judging from the opinions expressed concerning the tragic costs of speed it might prove startling and enlightening to motor car manufacturers. A clear question put, a clear answer obtained—and death might not come so often, nor so swiftly.

The National Safety Council's program for reducing America's yearly automobile traffic deaths urges strict enforcement of laws by the police, which will materially and speedily reduce the death rate. In 1935 in America there were 36,400 deaths due to the automobile traffic. — *Pennsylvania Medical Journal.*

KEEPING UP WITH MEDICINE

Not very long ago the name of one of America's leading physicians was employed by a lay magazine devoted to popularizing scientific news in an advertising statement which read something like this: "I enjoy your publication and value it highly as I sometimes find in it items dealing with the progress of medicine which escape me in my routine reading of medical literature." The astonishing thing is not that one of America's leading physicians should be unable to keep up with the progress of medicine through regular routine reading of medical literature since no less than four hundred medical publications are issued each year in the United States alone. The remarkable aspect of the situation is that a well-read physician can turn to a lay publication and find in it news concerning the progress of his specialty which had not previously reached him through authentic and well-established medical channels of information.

It has been hardly a month since another lay magazine in a condensed article concerning the cause and cure of influenza told its readers that bacteriologists have all but conquered epidemic influenza which in 1918 was responsible for the death of one out of every one hundred people. The article speaks with assurance of the work of Laidlaw in England and of Francis in Philadelphia, of the identification of the virus of influenza, of a protective serum effective in animals, of the possibility of both serum and vaccine treatment in human beings.

It is apparent that medicine needs some authentic digest of its progress which will be put regularly into the hands of all practicing physicians. Why should not such a great organization as the American Medical Association operate a bureau which would gather from all sources this type of information and to which all discoveries bearing upon the progress of medicine would be reported immediately? The Association now passes upon all remedies that are put upon the market and its stamp of approval is usually accepted as final. The machine which operates so well in the field of applied therapeutics might function on a wider scale by including in its work the evaluation of all reputed medical discoveries and the broadcasting of these results to a medical profession intensely interested in each new advance but as individuals obviously inadequate to such a Herculean task.—*Virginia Medical Monthly.*

HOSPITAL COUNCILS

The American Hospital Association, through its Council on Community Relations and Administrative Practice, has been studying the subject of hospital councils for several years. While hospital councils have been established in many cities there is a lack of uniformity in their organizations and a wide variance in their functions. There is one general idea to be found among them, that of coöperation in meeting the problems of hospital administration. This is only one advantage of the many which such an organization should offer. The importance of hospitals in a community in their relation to the public, to the medical profession and to all of the health activities, suggests the idea of a Hospital Council as a Community Health Council. This should appeal to physicians, hospital authorities and all others concerned with the administration of health agencies, and offers a working basis for group thinking and action directed under medical leadership.

The criticism has been made by the Milbank Foundation that the medical profession is not using the scientific facilities which are available to a degree where they have any social value. The chief difficulty encountered in applying the utmost available in scientific technique to medical practice is the lack of organization of these facilities. In every medical center there is a County Medical Society from which the leadership must come. There is one or more hospitals, with directors, staff, laboratory and all kinds of diagnostic and therapeutic equipment. There is usually one or more free medical clinics and some form of medical social service. The city and county authorities whose responsibilities include health service should necessarily be members of the council. Such an organization should be built around the hospital or group of hospitals as the community health center. Representation on a governing board of the council should be designed so that the balance of responsibility and power rests with the medical profession.

The medical profession can meet the needs of a more amplified medical service. This may be done through organizations of our existing facilities, bringing into the council the social, financial, and administrative agencies concerned with matters of health, and giving to this council the broad social vision and practical minded leadership of which organized medicine is capable. — *Kansas Medical Journal.*

BODY REGENERATION

No effort in life is more worth while or will yield greater returns on the time invested than will the restoration of physical vitality and endurance that usually come to those who carry through the somewhat severe self discipline necessary, asserts Dr. George A. Skinner in "The Road Back" in the April *Hygeia.*

In most cases physical regeneration is possible, but it is never easy. It requires time, patience and determination to get back some of the "pep" and elasticity that characterized the youth of the patient.

Regeneration is not a case of "dieting" for a few weeks and then resuming the old habits, as is frequently done; nor is it the taking of a little haphazard exercise when nothing better can be found to occupy one's time. Regeneration means habits, selecting the more difficult ways of doing things rather than following the line of least resistance. It involves interference with the pleasures of the table, activity when one is inclined to loaf, and in general, realization that the physical well being is the most valuable asset one can possibly possess.

Assuming that the physical examination has shown no marked organic changes in the body, the patient may start on his new routine with the guidance of his physician. Muscles must be rebuilt slowly; the nervous system must be readjusted and the heart control reestablished.

The question of alcoholic liquors and tobacco is certain to arise in the minds of many. Since both have important bearings on the possibility of physical regeneration, each individual will of necessity seek medical information on the matter.

TUBERCULOSIS NOT HEREDITARY

No matter how the tubercle bacilli enter the body, the fact remains that they do so after birth; and for that reason, tuberculosis cannot be called a hereditary disease. According to Dr. Herbert L. Herschensohn in the first of a series, "The Germs We Live With," appearing in the April *Hygeia,* over 90 per cent of the human race harbor the bacilli somewhere in their bodies, yet only a small proportion show any evidence of the infection.

Climate has little to do with the virility of these germs. Until recently it was thought that low damp sections of the country were more conducive to the infection by the tubercle bacilli than high dry localities. It is a fact, however, that most population centers are found in lower altitudes, affording a greater chance for the transmission of the bacilli from one person to another.

As to age the tubercle bacilli favor young adults. No matter at what age tuberculosis makes itself evident, the seeds of the disease are generally sown in childhood or early youth. The greatest toll taken by tubercle bacilli is in the years of young parenthood.

Occupation is often found to be of such a nature as to favor infection by the tubercle bacilli. When wages are a pittance, home surroundings are equally pitiful. Work which requires continuous confinement indoors where ventilation is inadequate, perhaps in an atmosphere of dust or smoke, extends an invitation to the tubercle bacilli with open arms.

HEALTHY SKIN

The public cannot be strict enough in the supervision of barber shops, swimming pools and gymnasiums if the spread of impetigo is to be prevented, declares Dr. H. N. Cole in part two of "The Skin in Health and Disease" in the April *Hygeia.* Two other troublesome results which may be attributed to these public places are plantar warts and ringworm infections.

Parents should be cautious of the stray cat or dog as a playmate for their children. A child may have a scalp ringworm infection that will keep him out of school for an entire year. It costs thousands of dollars a year to handle a large group of children affected with ringworm of the scalp.

Most complaints in regard to the hair can be put into two groups: hypertrichosis, superfluous hair, and alopecia, or loss of hair. Both groups are easy prey to the charlatan and quack. Numerous hair removers and the like are flooding the market. Generally they make conditions worse.

COMMUNICATIONS

S. B. Lawson, M. D.
Logan, West Virginia.

Dear Doctor Lawson:

I have read your article entitled "The Miners Hospitals" in the April number of the West Virginia Medical Journal, and think it is an excellent presentation of one or possibly two sides of the question.

However, like a buckwheat grain, there may be a third side; and an opinion from that theoretical third side is the purpose of this letter. I have practiced medicine and surgery in sight of one of these hospitals eighteen years, and within the same hospital seven years in two different periods separated by fifteen years. During the eighteen years in which I was theoretically in competition with the hospital, I was not conscious of any loss of income from the competition. During the seven years I have become convinced that Fairmont Hospital No. 3 (Fairmont Emergency Hospital) or an institution similarly administered is essential to the social welfare of West Virginia.

West Virginia has one of the largest indigent white populations of any state, due to the overdevelopment of its forests and mines. Formerly these people were allowed to die of obstruction of the bowels, typhlitis and 'tumors' as a natural process. Today their children know they require hospitalization. Who is to furnish this? The counties most in need of it are those least able to furnish adequate hospitalization. Take one of the mountain counties, with the finest of American blood, but poor as poverty itself. A boy develops acute appendicitis. The people do not have a cent. How is the boy to get the necessary hospitalization? Please name a hospital in this State that offers rates that a poor county can pay. At Fairmont Emergency Hospital the rates to the counties are $17.00 for the first week and a dollar per day thereafter. The case of appendicitis costs the county $24.00 which it can pay. One county—not Marion county, in which this hospital is located—paid Fairmont Emergency Hospital $3,000.00 in one year at these rates. This averages only about $1.70 per day for the total expenses of hospital, medical and surgical attention.

The City of Fairmont and Marion county are accorded only the same privileges and rates the other counties receive. There is absolutely nothing political about Fairmont Emergency Hospital excepting the appointment of the superintendent. The change from time to time as the politics of the State changes has in my opinion been beneficial.

In addition to the above mentioned work this hospital does all the surgery for the Girls' Industrial School at Salem and the Boys' Industrial School at Pruntytown. This work alone would cost the State the full appropriation this hospital receives if done by private hospitals, and it would not be done so well, because the close affiliation of the institutions makes for better follow-up work.

Take the problem of the delinquent girl who suffers from gonorrhea and syphilis. She is committed to the Girls' Industrial School. She is infectious. Who is to cure her? What hospital in the State? How much will a complete cure of this girl cost? One thousand dollars? Scarcely, with competent specialists, a sterilization operation, two years of antiluetic measures and examinations. Fairmont Emergency Hospital handles all these cases for West Virginia in an isolation ward of twelve beds, full all the time. We render them non-infectious, give them intensive treatment for their syphilis and send them to the industrial school where their ambulatory treatment is continued and every six months they are carefully checked and when necessary returned for another period of treatment.

Take the problem of the man with a hernia and no funds, living in one of the poor counties. He cannot get a job because of his hernia. At this hospital we give him the radical cure for $24.00, paid by his county. Is this competition? Yes, but as a taxpayer do you care to have him sent to a private hospital where your county will have to pay five times that amount?

We insist that the work we do would not be done if it were not for our hospital. It represents too much money. Not too much for Logan, Marion, Wood, Cabell, Kanawha, Harrison, Monongalia, Ohio, Marshall, McDowell, and others of the well-financed counties, but too much for the majority of the counties which after all are a responsibility to all of us as West Virginians.

The total cost of running Fairmont Emergency Hospital last year was $1.89 per patient day. The total cost of most private hospitals, including the doctors fee is four times that. We are able to do it by careful buying, a resident superintendent who is also chief surgeon, and Board of Control regulation. We are approved by the American College of Surgeons.

I was formerly—1917-1921—superintendent of this institution. My excellent friend Governor Morgan removed me because I was a Democrat. I did not get sore and I did not cease to boost the hospital.

We do no contract work here. We have been requested to do so, but will refuse.

I hope you will accept this letter as the 'third side' of this frequently discussed question.

Very sincerely,

C. M. RAMAGE, M.D., F.A.C.S., *Supt.*,
Fairmont Emergency Hospital,
Fairmont, W. Va.

THE WEST VIRGINIA MEDICAL JOURNAL

PUBLIC LIBRARY BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII JUNE, 1936 No. 6

TRANSILLUMINATION OF THE BREAST

By Angus K. Wilson, M. D.
Elkins, W. Va.

To the armamentarium of the physician concerned with the diagnosis of breast lesions, there has been added during recent years, a method which is little understood throughout the ranks of the profession, but which, when properly used and its results correctly interpreted, gives information of great value. Transillumination as applied to the breast was first described by Cutler[1] in 1929. It applies the principles of examination by transmitted light to this organ so that the procedure now should be as routine as is its counterpart in the examination of the testicle or the paranasal sinuses. Early difficulties which were encountered have been solved by the development of a water-cooled lamp which throws a strong light without heating the skin applicator, so that one may carry out an extensive examination without causing the slightest discomfort to the patient.*

Technique of Examination: The room in which the examination is to be made must be totally dark, and the eyes of the examiner should be accommodated before commencing. Usually, transillumination is carried out following palpation of the breasts, and the normal breast is first subjected to the light in order to have a standard for comparison. The patient is seated before the examiner, with both breasts exposed and these are systematically explored by the beam of light, an attempt being made to correlate the findings with those of physical examination. It is important that the portion of breast under examination be between the applicator of the lamp and the examiner's eyes. Furthermore it is of utmost importance that there be some means (as by a rheostat or iris diaphragm) of reducing the intensity of light in order that small lesions near the skin surface may not be over-illuminated, and so missed because of diffusion of light around them. Each portion of the breast is thinned out over the applicator, and examination made with light intensity of various strengths in order that all portions of the gland may be thoroughly inspected.

*The Dr. Max Cutler Transilluminating Lamp, manufactured by the General Electric X-ray Corporation.

Appearance of the Normal Breast: The normal breast (Fig. 1) appears as an almost homogeneously translucent structure and does not show any of the abnormalities to be described subsequently. The degree of translucence depends upon the size of the breast and its relative content of fat tissue, since adipose tissue transmits the light exceedingly well while fibrous tissue is more opaque. A breast which is lactating is homogeneously

FIG. 1—The normal breast under transillumination. (Cutler)

dense and so is unsuitable for transillumination.

Subcutaneous blood vessels are clearly outlined. Indeed, as will be shown later, the density of structures containing blood is one of the outstanding findings of transillumination. Where increased pigmentation is present, as in the nipple and areola, there is observed a well-limited shadow. At times the Tubercles of Montgomery show as small shadows which must be carefully differentiated from duct papillomata. In this there should be little difficulty since the tubercles are comparatively faint and obviously superficial.

Abnormal Findings: As a rule, patients present themselves for breast examination by reason of one or more of three complaints—pain in the breast, a lump in the breast, or discharge from the nipple. There are three main groups of abnormal findings which may by transillumination be detected in the breast, viz., hematoma due to trauma, solid tumors and cystic tumors. Solid tumors may be classified as benign and malignant. However, malignancy may occur in association with cystic lesions.

Hematoma: There are cases on record[1] of radical mastectomy having been performed for clinically diagnosed cancer of the breast, in the pathological specimens of which only evidence of hemorrhage could be found. The error is easily made, for in the depths of a large breast it is difficult or impossible to differentiate by palpation between semi-fluid and solid tumors. It is true that there is usually a history of injury associated with the lesion, but very often the patient will present herself several days or weeks after the injury and in all probability she has noticed a lump only shortly before seeking

FIG. 2—Hematoma in the breast, the result of injury. (Cutler)

advice. There may be no remaining outward evidence that an injury has taken place. Many hematomata present signs hitherto regarded as being almost diagnostic of cancer, and it is not at all rare to find dimpling of the skin and even retraction of the nipple due to this cause.

The density of blood under transillumination is unmistakable and a hematoma (Fig. 2) shows as a dense, almost black shadow. Fre-

quently it has a mottled appearance and the edge may or may not be sharply defined, the border usually shading off imperceptibly into the translucence of normal breast tissue. There is little risk of misinterpreting this characteristic appearance.

From the standpoint of therapy, differential diagnosis is essential, for should the lesion show the characteristic of a solid tumor, one's plan of treatment must be quite different from that of a benign hematoma. It must be borne in mind that there is no conclusive evidence that malignancy may not arise as a result of injury. Consequently, it is necessary to follow the changes which take place in the absorption of interstitial hemorrhage. Should transillumination show signs diagnostic of hematoma, no active therapy is indicated or necessary. However, it is important to examine the breast at frequent intervals to ascertain that the density is diminishing and that finally no opacity and no tumor mass can be detected on careful transillumination and palpation. A period of time varying up to three months may be required for complete absorption of the hemorrhage, and never during the required interval must one lose sight of the patient. If, on the other hand, the mass appears to remain stationary in size and density active measures to determine whether or not malignancy exists must be considered.

FIG. 3—Solid tumor of the breast, visualized by transillumination. (Cutler)

Solid Tumors: Solid tumors (Fig. 3) may be either benign or malignant. It must be clearly understood that there has been no claim made that transillumination will definitely differentiate between the two states. Under certain circumstances it may be possible to determine the status of a given solid tumor, but such occasions are rare. This limitation should not be construed as a criticism of the method. It must be remembered that even microscopic differentiation may be difficult, that both benign and malignant tumors may be present in the same breast, and finally, that the two conditions may co-exist in the same tumor.

FIG. 4—A breast which contains multiple cysts and is, thus, more translucent than normal. Individual cysts, occasionally seen, are not evident in this example. (Cutler)

Solid tumors are opaque to the light (though less dense than hematomata) and show as more or less well defined, discrete shadows in the breast substance. The border is usually quite clearly defined. It is important that the breast be thinned out over the applicator and that each portion be examined with both intense and diminished illumination. Very often one can readily detect by

decreased light, shadows which are entirely missed when the beam is too strong.

Finally, as an aid in differentiating between benign and malignant solid tumors, it should be remembered that a solitary mass in the breast must always be considered malignant until microscopically proven otherwise, while multiple lesions (especially if bilateral) are less likely to be so.

Cystic Tumors: Ordinarily, it is not difficult to determine whether or not a given tumor is solid or filled with fluid, but occasionally conditions may make clinical differentiation practically impossible. Such a state of affairs is likely to arise when one is called upon to examine a large, adipose breast which has in its depths a palpable tumor.

Cysts containing clear fluid are seen by transillumination either as clear, well circumscribed areas with a definite border surrounded by more nearly normal breast translucence, or the entire breast may appear to be markedly hypertranslucent. (Fig. 4). A breast which contains multiple cysts, as in the condition known by the ill-chosen term "chronic cystic mastitis"* is more translucent than is a normal breast. A breast which is the seat of Schimmelbusch's Disease may show one or more opaque areas in hypertranslucent surrounding tissues—a finding commonly made when the breast contains "blue dome cysts" described by Bloodgood.[3] A clue to the diagnosis lies in the fact that in such breasts there are usually multiple cysts making the breast more translucent than normal. The density of a blue dome cyst is usually greater than that of a solid tumor. The diagnosis may be definitely settled by aspiration. It is well to recognize the fact that cysts may undergo inflammatory changes causing adherence to surrounding structures. Where this occurs near the skin surface, "dimpling" may be found.

*Cheatle and Cutler point out that this term is used to include conditions which are physiological and those which are pathological. For the latter, characterized by the formation of cysts as in the definitely potentially malignant condition known as Schimmelbusch's Disease they suggest the term "cystiphorous desquamative epithelial hyperplasia" as being more accurately descriptive of the process and condition. "Mazoplasia" is the term they apply to the benign condition characterized by desquamation of epithelium into, and resulting distention of, terminal ducts and their acini. There is no cyst formation in mazoplasia.

Bleeding Nipple: One of the most important uses of transillumination is the correct interpretation of the cause of bloody discharge from the nipple. The condition may be due to one of several causes, the most important being (a) trauma, (b) duct papilloma, either single or multiple, (c) duct carcinoma and (d) in rare cases a type of carcinoma which arises in the epithelium of the terminal ducts and acini.[2]

FIG. 5—A solitary duct papilloma as seen by transillumination. (Cutler)

Trauma: A history of injury combined with the appearance characteristic of hematoma is sufficient to point to the correct diagnosis. The precautions of frequent examination must be observed here as in more deeply seated lesions of this nature.

Duct Papilloma: Duct papillomata are wart-like epithelial growths occurring in the ampulla, in one of the large ducts of the nipple or in the large branches of a duct. The tumors may reach tremendous size, though commonly they do not exceed a centimeter in any dimension. They may or may not cause bleeding from the nipple.

Since these tumors are soft and sessile, it is generally impossible to determine their location by palpation. Point pressure in the region of the nipple or areola may cause a bloody discharge from one or more particular locations, but as a rule this procedure gives absolutely no localizing assistance. If not the

cause of bloody discharge from the nipple, or if they do not contain blood, duct papillomata may not be visualized by transillumination; when found they form one of the most striking demonstrations of the usefulness of the method.

With a light of suitably reduced intensity, one may see situated below the nipple or in the adjacent areola, one or more dark "spots" (Figs. 5 and 6) and it is sometimes possible

FIG. 6—Multiple duct papillomata. The radial line represents a scar, resulting from operation for the removal of a duct papilloma. Bleeding from the nipple was not controlled by excision of this papilloma, and on transillumination two others were localized. (Cutler)

by pressure over one of these spots to observe the discharge follow the course of a duct and be expressed at the nipple. The density definitely localizes the lesion, and if the examination is carried out in the position to be occupied by the patient during subsequent treatment, the skin may be marked with silver nitrate or indelible ink to form a localizing guide.

Since the present communication is concerned chiefly with diagnosis, a detailed discussion regarding the significance of duct papillomata and their appropriate treatment is not in order. Cheatle and Cutler[2] have advanced evidence which shows that these lesions may, in many instances, be potentially malignant and indicative of changes which finally may be determined in the development of carcinoma. The writer is strongly of the opinion that accurate diagnosis and adequate treatment of this condition are fundamentally important.

It must be emphasized again that reduction of the light to a minimum "threshold" intensity is necessary if one is to visualize these structures.

Duct Carcinoma: Here the clinical finding of bloody discharge from the nipple is usually supplemented by palpation of a lump which casts a shadow similar to that of other solid breast tumors. However, Cutler[1] records one case and subsequently reports another[2] which demonstrated bleeding discharge from the nipple without localization, either clinically or by transillumination, of a tumor or shadow. Both of these patients had duct carcinoma of microscopic proportion, the diagnosis being made only after microscopic examination of serial sections of the whole breast.

Conclusion: Transillumination of the breast provides an additional method for differentiation between various lesions. The procedure is so simple and frequently yields information of such great value in diagnosis, prognosis and treatment that no breast examination may now be considered complete without it.

BIBLIOGRAPHY

1. Cutler, Max: *Transillumination as an Aid in the Diagnosis of Breast Lesions.* Surg. Gynec. & Obstet., 48, 721, 1929.
2. Cheatle, Sir G. L. and Cutler, Max: *Tumors of the Breast.* Philadelphia; Lippincott; 1932.
3. Bloodgood, J. C.: *The Blue-Domed Cyst in Chronic Cystic Mastitis.* J. A. M. A., 93, 1056, 1929.

The author wishes to acknowledge with thanks, the kindness of Dr. Max Cutler, director of the Tumor Clinic, Michael Reese Hospital, Chicago, who gave permission for the use of illustrations; and to the General Electric X-Ray Corporation for their photographic reproduction.

MEDICAL MEETINGS

"When your doctor goes to the medical meeting, count it in his favor. . . . He is a doctor whose value to his patients is immeasurably enhanced," says Dr. W. W. Bauer, associate editor of *Hygeia*, in the editorial of the June issue of that magazine. He is referring specifically to the annual meeting of the American Medical Association, convening in Kansas City, Mo., May 11-15.

TREATMENT OF INTESTINAL TUBERCULOSIS*

By R. H. WALKER, M. D., F. A. C. S.
Charleston, W. Va.

THE forces of the medical world have for many years been marshalled in a campaign against tuberculosis in all of its forms. Scientific research work has been carried on by the most eminent specialists, and medical men have discussed the subject in clinics and in their regular meetings. The progress of the disease has been checked exactly in proportion to increased knowledge in care and treatment of patients.

Much of the progress that has been made, though not of a scientific nature, has been the result of the educational campaigns carried on by medical associations and affiliated organizations. These campaigns have enlightened the people on health subjects and brought about better sanitary conditions, especially in checking the indiscriminate spread of tubercle bacilli. There is yet much to be done and much to be learned. We have not reached the highest point of efficiency in the treatment of tuberculosis, nor its resultant and attendant complications.

Intestinal tuberculosis is the most frequent and decisive complication of pulmonary tuberculosis. It occurs in from fifty to eighty per cent of all fatal cases. This complication is very frequently the deciding factor in the grim fight that is waged between the ravages of the infecting organisms and the vital resistance of the patient.

A patient afflicted with pulmonary tuberculosis, free from the intestinal complication, has an excellent opportunity for recovery. This is because the nutrition of the body is only slightly impaired. When this dreaded intestinal complication occurs the vitality is sapped and, quite often, the picture of cheer and hopefulness is changed to that of despair.

A text-book description of intestinal tuberculosis gives us a graphic portrait of the terminal stages of the disease, but treats lightly on means and methods of recognizing the symptoms before the intestinal complication is well advanced. If we wait until the text-book picture develops before recognizing this complication we will often deprive our patients of every chance they may have had for ultimate recovery.

In a given case of pulmonary tuberculosis the physician should be able to anticipate the development of this dreaded complication. There are many symptoms by which its presence can be recognized and treatment begun even before the first appearance of the more pronounced symptoms. A loss of appetite, flatulence, alternating constipation and diarrhea, tenderness of abdomen, a palpable and painful cecum, together with x-ray findings of "hypermotility and filling defects" makes the diagnosis positive.

Treatment in all forms of tuberculosis should be directed toward the prevention of complications—in fact, the very essence of the treatment of this complication is prevention.

When once developed, the treatment of intestinal tuberculosis is essentially medical and is based upon the long recognized principle of rest, diet, hygiene, and heliotherapy. The first three factors have been commonly employed, but heliotherapy or light rays, is the outstanding development of the last decade in the treatment of intestintal tuberculosis. The ancients recognized the curative and healing power of sunlight and patients were exposed to the rays of the sun as a part of the treatment since the first days of medical science. The new and improved appliances by which the light rays, direct and concentrated,

*Read before the Kanawha Medical Society.

may be administered in a scientific manner has effected the cure of many patients and has given relief from pain to many others.

The perfection of x-ray technique by our co-laborers—the röentgenologists—has made possible the early detection of the intestinal complication. Their science has also made possible the use of heliotherapy as one of the most important factors in the arrest and treatment of the disease. The development of the x-ray and the use of heliotherapy are, in my opinion, the two real outstanding achievements in medical science in the war against tuberculosis. We hold out our hands and say to science: Give us more light rays on the subject!

Surgery may be said to be only an adjunct in the treatment of intestinal tuberculosis. However, it is frequently life-saving in perforation, partial and complete obstruction and in cecal and appendiceal types. The excision type of operation is used in cecal and appendiceal forms. The exclusion type once had a brief period of popularity but this has to a large extent passed. The development of x-rays and heliotherapy has made these types of operation in most instances unnecessary.

All surgeons and clinicians who have cared for patients suffering from tuberculous peritonitis have observed the beneficial effect of a simple laparotomy and exposure of the peritoneum to the light. There is no positive explanation of the good result thus obtained.

I observed very carefully my last three patients suffering from intestinal and peritoneal tuberculosis, whom it became necessary to treat surgically. After removing the obstruction I varied the technique of treatment by exposing the peritoneal cavity and viscera to Alpine light rays, and this method of treatment had markedly beneficial results.

The exposure of the peritoneum and viscera to Alpine light may appear to many a radical form of treatment, but I believe it to be a long step forward in the management and treatment of these difficult cases.

THE MENTAL HYGIENE MOVEMENT*

By EDWARD F. REASER, A. B., M. D.
Huntington, W. Va.

SINCE childhood I have read in books of the disease "leprosy." Lepers are described as loathsome beings whose flesh decays and falls away from the bones. In the days when the Bible was being written, lepers were spurned and cast out from society and forced to live as wild animals. Children in Sunday school are told of their horrible plight, how they were driven beyond the city walls, treated with scorn and abandoned to their fate, apparently forsaken by man and God alike.

I have had the opportunity to visit the United States Marine Hospital at the foot of the levee on the Mississippi River near Baton Rouge, where the federal government collects together all lepers hospitalized in the continental portion of the United States. There I witnessed the results of modern scientific progress and realized that these poor souls have not been forsaken. There were about 350 of them, as I recall, of various ages and nationalities. I learned that the physicians and nurses were not afraid of them, although the hospital floats the yellow flag of quarantine.

There was no dropping off of fingers or sloughing of tissues. The open ulcers that I saw were clean and free from secondary infection. I was told that a goodly number of those present would be cured and restored to society. The change in view regarding leprosy came about because a few years ago some physicians discovered that the disease is due to bacterial infection and that hygienic meas-

*Radio address delivered over Station WSAZ, Huntington, W. Va., April 9, 1935.

ures will prevent its loathsome features which are the result of dirt and filth introducing secondary pyogenic organisms.

Not many years ago, most people believed that tuberculosis was hereditary and this view led to little effort to prevent its spread. But the great bacteriologist Koch discovered the germ which causes the disease and demonstrated that with proper cleanliness and care its transmission from one person to another may be prevented. This bacteria, like that of leprosy, produces a condition in the tissues of the body which enables various pus forming organisms to enter and set up a secondary infection. It is the careless disposal of the purulent matter cast off that spreads the tubercle bacillus.

During the Spanish-American war more soldiers lost their lives as a result of typhoid fever than from the fire of enemy guns. But twenty years later, with millions of men in arms, typhoid was practically unknown. In the interim the scientists had been at work and had developed a vaccine which built up in the blood stream substances known as antibodies that served to agglutinate and destroy typhoid bacteria. Many examples of the achievements of preventive medicine in the effort to control and ward off diseases could be cited, as smallpox vaccination, antitoxin for cure of diphtheria and toxin-antitoxin for its prevention, the Pasteur treatment in rabies, antivenom in snake bite, and numerous others. It is only within the past century that much progress has been made in the field of disease prevention and health preservation and that the principles of hygiene have been formulated. Superstition and lack of educational facilities among the masses of our people have greatly impeded this progress.

In the past hundred years the world has reached a stage of complexity beyond the imagination of our grandfathers. One of our early presidents, while on a visit to what was then the west, wrote to a friend describing the fertile prairies south of Lake Erie and said that the land could never be used for agriculture because the grass grew six feet tall and a plow could not turn the sod. He lived in an age when the wooden plow share was used and there was a belief among farmers that an iron blade would poison the soil. Since then fertile fields have been tilled and great cities have sprung up in the section which he visited.

With progress in industry and transportation have come added problems to confront us and challenge our attention. New kinds of physical disorders have appeared. The machine age has brought added responsibility to the physician and surgeon. The congestion of population in cities makes the practice of hygienic principles a special task for government. Along with the increase in medical knowledge and skill have come new and added responsibilities to the profession and physicians everywhere are striving to add to their own knowledge of means for combating disease, to impart information to the lay public which will help to prevent sickness, to promote longevity, and to make the lives of our people brighter and happier.

Hygiene has broadened in scope to embrace all factors that influence the health and welfare of man. We now speak of it in various branches, such as personal hygiene, group or social hygiene, industrial hygiene and mental hygiene.

My task is to discuss some of the phases of mental hygiene and to present a few of its many problems. Mental hygiene is a recent contribution and the name itself has been in use only a little more than thirty years. The movement, which has now spread in national organizations in twenty-two countries, was begun by the efforts of a non-medical man, Clifford W. Beers, who, with a small group of interested individuals, founded the first Mental Hygiene Society as a local unit on May 6, 1908. Mr. Beers had spent three years in various mental institutions in his successful fight to regain his health. In this time he found many faults needing correction, and his constructive criticism recorded in his book, "A Mind That Found Itself", has been invaluable in calling attention to opportunities

for service. His local society was a nucleus for a state organization and now there are state mental hygiene societies in eighteen states of the Union, as well as many allied organizations, parts of whose programs are devoted to the same purposes. Representatives from the various nations met in the first International Congress on Mental Hygiene in Washington, D. C., May 6, 1930, on the twenty-second anniversary of the founding of the first mental hygiene society in the world.

"There are one million young people walking the streets of the United States today who, if the statisticians are able to tell us the facts about the future, are necessarily doomed to spend some of their time before they die in institutions for mental disease." This challenges the attention of all physicians, especially those of us who are psychiatrists and devote our efforts to the care and treatment of nervous and mental disorders, but it is of grave concern to parents and teachers everywhere.

If hygienic measures have been of service in the field of somatic diseases why should we not expect reward to follow an effort to apply suitable means for the prevention of mental disorders? Insofar as mental disease is concerned we are today in about the same stage of development as the medical profession was when Oliver Wendell Holmes wrote his thesis on the transmission of puerperal fever by the doctor's unclean hands. His advice was scorned by most of his colleagues but time completely confirmed his views. Perhaps many of the controversial teachings of psychiatry and of mental hygiene of today may be vindicated in the future.

We must learn to think of the individual as a single integration. The common idea is to separate the mind from the body and set the soma apart from the psyche. That is wrong. The individual is a single unit with mental and physical functions so related to each other as to make them inseparable for purpose of study. The constitution is the result of heredity plus a number of other factors. Cosmic elements, such as climate, barometric pressure and sunlight, as well as food and water, are factors that influence the individual. For example, cretinism, rickets, pellagra, and a number of other deficiency diseases are endemic in certain parts of the world. These cosmic factors have greatly influenced the racial differences of mankind.

Sub-human environment contributes to the moulding of personality. Most children love or fear dogs. Some manifest sadistic tendencies directed toward their pets and others will conceive an intolerable loathing for certain types of lower animals, such as reptiles, toads, and worms.

Perhaps next to heredity, human environment is the most influential factor. The individual child learns from those surrounding him. Regardless of his racial ancestry, the language which he learns is that spoken by those with whom he associates.

The old idea was that the mind of the infant is a "tabula rasa" but the baby is born with a set of instinctive urges or desires that must be fulfilled at least in part. These instincts are the ones that have survived the evolution of the ages and have proven survival value. Among them some of the most potent are self-preservation, race preservation, the herd or gregarious instinct, and the acquisitive instinct. As the child develops the instincts are more and more pushed from the background of consciousness and come to reside in the unconscious mind. Fixations may be produced at any level. Improper manipulation of the parts as the mother cleanses the body of her infant may lead to a fixation point which is capable of deviating the psychological growth of the child. The erogenous zone in the young infant is not localized, but more or less universal. Thumb-sucking is a manifestation of oral erotocism and anoerotocism is often found in the adult of the paranoid type and practically always in homosexual perverts. Psychic trauma produces definite fixations. Words and actions of parents, improperly imparted sex information and sexual assaults by playmates or older persons may constitute psychic traumata.

Adaptation of the individual to his surroundings is his constant problem. Many of the unconscious desires are in conflict for expression and the form of expression must conform to accepted social standards. The herd instinct of the individual requires this. He must have the approbation of his fellows. This is distinctly demonstrated by the tendency of many persons to commit suicide after having been apprehended in some anti-social act or practice. The individual meets the situation by compensation or regression. Substitution of socially acceptable activities for instinctive libidinous drives occurs more and more as the child progresses in his development.

The reactive rôle of an individual depends to a large extent upon the habits acquired by copying others, as well as the traditions handed down from parents. The proper kind of training will to a large extent prepare the child for a healthy mental life. What constitutes proper training is the problem of parent and teacher. Here again we are dealing with personalities whose relationship to each other brings about new factors of influence upon the child. Parents and teachers have passed through the same developmental stages as the child is passing through with fixation points at various levels and consequent deviations of growth. Prejudices have been acquired. Likes and dislikes are well established. The relationship of the child with the parent, and of the child with the teacher, is further modified by the relationship of the parent with the teacher. All these factors are in constant imbalance and something is always needed.

"The term 'Mental Hygiene' serves to embrace all activities, both physical and mental, which in any manner affect the human mind. Its very scope is so vast that it can not be measured, comprising not only the mentally ill, the psychotic, the psychoneurotic and the defective, but also the supposedly normal, and involves the recognition and serious consideration of all those prejudices, fears, worries, anxieties, depressions, pessimistic moods, hatreds, jealousies, grievances, and otherwise unhealthy preoccupations to which attitudes may justly be attributed a large proportion of apparent failures, maladjustments, and general social discontent."

Psychiatry and many supporting sciences are now being utilized in a great forward movement seeking the solution of the numerous problems that must be solved in the interest of mental health. Among these problems are those of home conduct, school adaptation, social contacts, industrial adjustments, mental ease and physical comfort. Among unselected children of four years of age about one out of three will present definite behavior problems such as phobias, extreme shyness, temper tantrums, bed-wetting, perversity of appetite, and defects of speech. Most of these can be modified or corrected if suitable effort is made. One per cent of the pupils in the public schools of America present gross speech defects. Mental tests scientifically administered in various places prove that mental deficiency is much more common among school children than would be expected. If we consider all the levels of intelligence below the normal we will probably find some degree of deficiency in one-third of the public school population. About 34 per cent of the boys and girls under juvenile court supervision in the State of New York for delinquency, present problems that require psychiatric diagnosis and treatment. Even in high schools there are many students who have emotional instability, unusual personal traits, such as seclusiveness and poor social contact, and maladjustment of work, study and sports.

These are only a few of the many examples that could be cited to prove the need for a mental hygiene clinic within the reach of every parent offering opportunities for professional advice from persons trained and experienced in the field of psychiatry. Mental health problems are public health problems and they are confined to no single group of our population regardless of age, racial differences or economic barriers. The medical

profession should accept the opportunity to aid in the education of our people to the necessity of establishing clinics to which children and adults may come for help and guidance and from which may emanate information to aid parents, teachers, penologists and employers to put into practice the principles of mental hygiene.

PAINFUL FEET*

(Differential Diagnosis and Treatment)

By ATHEY R. LUTZ, M. D.
Huntington, W. Va.

THE fact that there is no one part of the human body which produces so much discomfort, and even disability, and at the same time is given so little really scientific consideration prompts this attempt at a brief discussion of the subject of painful feet. I know only too well that should this paper come into the hands of the laity it will further the rather common idea that the orthopedist is a foot specialist. The word orthopedic is entirely misleading, especially in English speaking countries where it is referred by them to the Latin root "ped" meaning foot. Much too often the orthopedist finds that he thoroughly surprises his patients with the information that he "also treats broken wrists."

The multitude of individuals suffering from some sort of "foot pain" is so great that chiropodists have become wealthy and their profession is so lucrative that it is one to be envied. Concerns dispensing numerous designs of metal plates, modified shoes, and elastic supports find that the public is anxiously awaiting any new idea that will relieve them of painful feet. The results are almost always distressing and each newly advertised method usually draws its share of revenue.

Flatfoot or Pes Planus: Not going into the skeletal anatomy of the foot, we will merely call attention to its two main arches; namely, the longitudinal arch and the transverse or metatarsal arch. The muscles which activate the foot may be divided into two groups—the intrinsic and the extrinsic. The former are the short flexors, their action being that of bowstrings pulling the ends of the longitudinal and transverse arches toward each other maintaining the elevation of the arch. The extrinsic muscles include the adductors; namely, the tibialis anticus, tibialis posticus and flexor hallucis longus. These muscles protect the long arch and supinate the foot. Hence it is easy to see that muscle weakness is the first step toward a flatfoot. When a person subjected to long standing is unable to support the weight by muscular contraction, the muscles relax and the weight is then borne on the ligaments. As a result the arches descend and flat-foot deformity occurs. The same thing happens without standing strain when the muscles are weakened from disuse or disease. If the muscles get into this weakened condition normal stress may result in painful feet, and eventually flat arches if proper treatment is not instituted.

All symptoms of flatfoot may be present before there is any demonstrable dropping of the arch, and this is the ideal time for correction. At this stage the condition is known as 'muscle strain.' The muscles become weak, throwing the stress on the ligamentous structure, resulting in pain along the medial border of the foot, at the intersection of the stretched ligaments, and also at the anterior portion of the foot and beneath the os calcis at the origin of the plantar fascia. The resulting poor posture which usually goes along with pronated feet may produce pain in the calf of the legs,

*Presented to the Junior Medical Society, Huntington, W. Va., February 7, 1935.

the knees, hips and back. Unfortunately the pain does not become particularly noticeable in children until after considerable damage has been done to the arches. Consequently this type of patient is rarely seen by the physician until the mother brings him in, saying that the "feet look flat". If these cases go untreated, severe pain and disability will be the final outcome.

The treatment for muscle strain or flatfoot may be divided into three groups: First, physiotherapy and muscle developing exercises; second, supports and proper shoes; third, manipulative and operative. The average weak foot (with or without flatfoot deformity) should be treated in the following manner. The feet should have a thorough baking and massage. This improves circulation, gives tone to the weakened muscles, and promotes full range of motion to the joints of the foot, all of which as a rule, have become stiffened. This is followed by a carefully outlined system of exercises to develop the weakened muscles. The exercises for the toes, without weight-bearing, are flexion and extension of the toes; for the foot, strong plantar flexion, adduction and inversion of the foot, and finally dorsiflexion. No value is realized from rising on the toes, and this may be even harmful in the case of very weak feet. We have an outline of five exercises which are taught the patient, with instructions to carry out these exercises twice daily at home. The exercises develop the principal muscles of the foot and as a result raise the anterior and longitudinal arches. Practically all people with weak feet develop poor posture and need instruction in standing and walking properly. Exercises in corrective walking should be practiced with the foot adducted and its inner border elevated. In making each step the weight should be borne on the heel and outer border of the sole. In addition to this treatment the patient should be fitted with proper shoes with certain modification for each case, such as Thomas heels, elevation of the inner margin of the heel, etc. Arch supports are seldom necessary and when used should be discarded as soon as the muscles have been strengthened by the exercises. The continued use of arch supports and other mechanical devices tend to weaken the muscles still further and to perpetuate their use. Arch supports alone will not cure flat feet, however, they may relieve pain for a limited time.

I shall not go into the treatment of rigid flatfoot, which constitutes a major surgical problem.

Flat-foot or muscle strain is by far the most frequent cause of painful feet, and consequently many individuals with other, and even more serious conditions are often treated for years with the regular run of arch supports and other mechanical devices which are advertised to relieve painful feet.

Arthritis: The pain from arthritis of one or more of the tarsal joints may be confused with muscle strain of the foot, and often requires a therapeutic test consisting of efficient foot strapping with adhesive in order to make a differential diagnosis. If the condition is purely static, immediate relief will be obtained. If the strapping does not give relief some other cause is most often present and a careful search for foci of infection should be made. An x-ray film may aid in the diagnosis.

Chronic Vascular Disease: Affections of the arteries and veins of the extremities may produce symptoms similar to muscle strain or flat-foot, and a differential diagnosis is required before rational treatment can be instituted. Thromboangiitis obliterans (Buerger's Disease) is the most common one of the vascular diseases, and is dreaded because of its stubborn resistance to treatment, and the frequent tragic outcome. It manifests itself with pain in the sole of the foot, in the ankle, and in the toes, and walking is soon disturbed by cramp-like pains in the calf of the leg. We note the following characteristic findings. Disappearance of the pulse in the dorsalis pedis and posterior tibial arteries, blanching of the lower extremities when they are elevated above the horizontal plane, and hyperemia or reddening of the foot when in the

dependent position. Pain in the calf of the leg or foot when walking, with immediate cessation when the limb is rested, and the fact that 99 per cent of the cases occur in Polish or Russian Hebrews. An accurate determination of the rate of loss of heat, surface temperature and salt absorption from the injection of saline solution in the form of intracutaneous wheals are also of value in the diagnosis. It is a disease of the male sex.

These characteristics will differentiate this disease from static deformities, but after a fairly careful study of thromboangiitis obliterans, I am still unable to separate it in its early course from the other organic vascular diseases.

Metatarsalgia or Morton's Toe: This is a rather obscure, but exceedingly painful condition that must be considered when examining a painful foot. It is characterized by attacks of sharp burning pain, situated as a rule, in the fourth metatarsophalangeal joint and is supposed to be caused by a pinching of the digital branches of the plantar nerves between the heads of the metatarsal bones. Since it is associated with flat transverse arches, which at times may be invisible, the treatment is that of flat-foot with special attention to elevation of the transverse arch. In severe cases an operation consisting of removal of the distal end of the metatarsal bone may be necessary.

March Foot: This is a condition frequently observed in individuals who are forced to walk long distances and was first described by Jansen. It is characterized by pain, swelling and spasms of the intrinsic muscles of the foot. The disease appears in the second, third and fourth metatarsal bones and is caused by a congestion of the fat with blood and lymph from foot strain. A sudden pull of the fibers of the interosseous muscles may separate the periosteum from the bone and cause a hemorrhage which presents itself as a spindle-shaped thickening along the bone. The bone becomes brittle and often results in a fracture without any history of injury or severe pain. The röentgenogram, in the later stages, shows a spindle-shaped enlargement of the metatarsal bone together with a fracture through the shaft.

Claw toes, hallux valgus, callosities and other conditions with plainly visible deformities will not be considered.

Summary: 1. The average physician will not give the thought or take the time to examine carefully and treat properly painful feet.

2. Much harm is being done by the wholesale use of ill-fitted arch supports and other mechanical devices.

3. Flat-foot or muscle strain of the feet should be treated by muscle developing exercises, and never by arch supports alone.

4. Young children seldom complain of pain in the feet and legs until after the arches are quite flat. Pain usually precedes a flat arch in the adult.

5. Arthritis must be considered when examining painful feet.

6. Chronic vascular diseases such as Buerger's disease in its early course may produce symptoms similar to flat-foot and must be ruled out by a careful physical examination. This is often true of metatarsalgia and march foot.

7. Numerous other conditions produce painful feet but they are associated with such visible deformities that differentiation is apparent on casual inspection.

RESPIRATORY DISEASE

While the early history of respiratory diseases remains confused on some points, there is some evidence that tuberculosis of the bone existed along with other forms of the disease. What must have been laryngeal diphtheria was described in 1579 as follows: "If the sore throat begins with smothering, great pain and fever, and the inflammation or swelling is not seen either inside or outside the throat, it is a sign that it will kill the patient on the first or second day." Dr. P. M. Ashburn continues his discussion on "How Disease Came with the White Man" in the June *Hygeia.*

A condition called *modorra* is said to have been fatal to Luis Ponce de Leon and several Dominican priests who accompanied him when he went to Mexico to relieve Cortez of his command.

THE TREATMENT OF PNEUMOCOCCIC PNEUMONIA*

By V. E. MACE, M. D.
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THE fatality of pneumonia in its various forms ranks with that of tuberculosis, cancer, heart, and kidney disease. Its death rate will be found to be fairly constant over long periods of time and in different localities, and it averages about 36 per cent. A study of 59 cases of lobar and 51 cases of bronchopneumonia receiving hospital treatment shows a death rate of 35.5 per cent. This study covers the period of 1934 and ten months of 1935, and gives all cases regardless of age, type, or number of days in the hospital. An attempt is made here to institute a form of treatment to reduce the mortality rate of all forms of pneumococcic pneumonia.

About 95 per cent of all pneumonia is due to the pneumoccus of Types I, II, III, and IV. Type IV is divided into twenty-eight subdivisions of which Types I, II, III, VIII, VII, and V, are those most commonly encountered and in this order of frequency. The percentage of frequency and fatality of each type is about as follows:

Type	*Frequency*	*Fatality*
I	30-40	30
II	15-20	40
III	15-20	50
IV—		
(8)	7	30
(7)	5- 8	30
(5)	5	40

The mortality rate among cases in which positive blood cultures are obtained is three or more times as great as in cases with negative blood cultures. This is true for all pneumococcus types and regardless of the stage of the disease when the positive blood culture is obtained. Type III is relatively more frequent among persons in older age groups and among those with chronic debilitating diseases. This accounts for the high death rate in the aged and in undernourished infants and children, and in terminal pneumonia. It is the most frequent type of pneumococcus found in the throats of normal persons and in those with chronic respiratory diseases.

The methods of typing are omitted, for space here will not admit such details. Any one of these types will produce lobar pneumonia and very often produces bronchopneumonia, and it is for this reason no attempt is made to differentiate between the treatment of the two. For academic purposes there is every reason to differentiate between the different types, but from the standpoint of treatment this is not so important as will be brought out under the discussion of serum treatment.

The general management and nursing care should be directed toward the comfort of the patient and alleviation of symptoms and complications. The patient's room should be well ventilated, protected from drafts, and kept at a temperature of 68 to 70 degrees. After the diagnosis has been made, whether by physical examinations or x-rays, further examinations should be kept at a minimum and then only for the detection of complications. One of the important things is rest. This includes few visitors. Irritating cough can be relieved by keeping the patient under the influence of such drugs as will quiet the cough and keep the excretions loose. Codeine sulphate gr. ½ and ammonium chloride gr. V, every four hours will suffice. For the relief of pleuritic pain the sheet anchor is morphine in doses large enough to keep the patient comfortable, and since pneumonia is a disease of short duration, there is little need for fear of addiction. The choice method of administration is

*Read before the Fayette County Medical Society at Oak Hill, November 26, 1935.

typodermically. The fluid and caloric intake should be adequate and should consist of any fluids and bland soft diet. If the temperature is extremely high, milk will not be well tolerated. Ten per cent glucose 500 cc. intravenously will help keep up the caloric intake and supply body fluids. It probably is best given in an equal amount of normal saline, and should be given with care in those cases showing cardiac embarrassment. For a temperature of 104 degrees or above, tepid sponge baths may be given if they do not annoy the patient too much. An ice cap to the head will help to relieve temperature. Hydrotherapy does much to relieve delirium. During baths and at all other times the patient's body should be protected from sudden changes of temperature. The clothing should be warm, of wool, and admit of free examination. Elimination is best produced by mild aperients such as small daily doses of milk of magnesia and enemas. Enemas which annoy the patient too much must be omitted. A rectal tube will relieve tympanites and if severe, a Levine tube may be used but with caution, however, it can be passed with little discomfort to the patient by an experienced person, after spraying the nose and throat with cocaine. The nasal route is the better. Pituitrin or peristaltine may be used for the relief of gas, but both are usually followed by some shock.

Those patients showing a rapid, weak, thready pulse or low blood pressure need some cardiac stimulation. Digitalis is the drug of choice. The powdered leaf in doses of one and one-half grains cause little gastric irritation and this dose given four times daily will digitalize the patient in four or five days. If rapid digitalization is required, the dosage may be increased. Coramine may be used since in addition to being a cardiac stimulant, it is also a respiratory stimulant, but digitalis is the drug of choice especially in cases of extreme toxemia and right cardiac dilatation.

Anoxemia is best treated by the use of oxygen either by oxygen chamber or tent, but the nasal catheter may be used. The tent is most economic and satisfactory. The oxygen is given at a rate of four liters per minute and passes through an ice chamber to cool it and to produce moisture before it reaches the tent. Oxygen should be given at the first signs of cyanosis or extreme respiratory embarrassment. It would be even better to begin its use before this time, but its cost is often prohibitive, the daily cost of the oxygen tent being about $15.00 per day. At the rate of four liters per minute the concentration will be 40 to 60 per cent. This will quiet the respiration, relieve cyanosis, and give the patient rest. Once a patient is put in an oxygen tent, it is better that he be kept there until the critical stage has passed.

I have not used artificial pneumothorax but a review of the literature relative to its use in the treatment of pneumonia shows fair results with some hazards. It has not been used locally so far as I know. Its use is limited to unilateral lobar pneumonia and would be quite serious if an involvement of the other lung should later occur, however, in the future it may be used in bilateral pneumonia as it is now used in bilateral tuberculosis. The pneumonic lesion may begin with the plugging of a bronchus by the accumulation of mucus, producing atelectasis followed by cellulitis. The introduction of air into the pleural space on the affected side may dislodge this plug, giving drainage and alleviation of symptoms.

Artificial pneumothorax as other forms of treatment should be given early. To obtain the best results, it should be given not later than the first or second day and in amounts of from 200 to 400 cc. at one or two day intervals. The technique is the same as that used for tuberculosis and the site of injection is the seventh interspace posterior axillary line. The treatment relieves pain by a separation of the inflamed pleura in the same way as does fluid. This relief of pain will permit a greater respiratory amplitude lessening the cyanosis. There seems to be a decrease in the absorption of toxins from the diseased lung into the blood stream and an increase in toxin

transport to the draining lymph nodes. This no doubt is due to compression of the lung and a lessened quantity of blood that flows through the lung. It is thought that in cases having atelectasis there is a rise in intrathoracic distress by shifting of the mediastinal structures and marked displacement of great vessels, trachea and heart toward the affected side. Since shifting of the mediastinal structures is due to the increased negative intrathoracic pressure, the introduction of artificial pneumothorax gives immediate relief. If pneumothorax lessens the amount of toxic absorption and shortens the period of toxicity, there will be less damage to the heart, kidneys, liver, and other vital organs.

The hazards of artificial pneumothorax are spontaneous collapse due to rupture of the lung by pleural adhesions or by the operator's needle. Pleural shock and air embolism are occurrences to be watched for but they are rare. Empyema may result from contamination of the pleural space from the outside or by puncturing the diseased lung; however, it should not be introduced directly over the diseased lung. This method of treatment is given with considerable impunity, but in the hands of experienced persons may save some lives. It remains to be seen with what success it will meet. Those who have used it claim the death rate has been materially reduced.

The discussion of serum treatment principally will be limited to the use of Lilly's antipneumococcic serum, for I have used no other except in one case. Lilly's serum has been on the market since October, 1934, and I have used it in nine cases ranging in age from six months to 65 years. These nine cases will be presented briefly.

Each dose (20 cc.) of this serum contains 10,000 units of protective antibodies each for Types I and II. These are specific for Types I and II. One unit is that amount of serum which will protect a mouse against one million fatal doses of virulent pneumococcus organisms. These are called Felton units. Each dose also contains 100,000 neutralizing antibody units and 50,000 heterophile antibody units. A neutralizing antibody unit is that amount of serum which will neutralize one thousand skin test doses of pneumococcus toxic filtrate. A heterophile antibody unit is that amount of serum which will hemolyze in the usual way—.25 cc. of one-fourth dilution of washed sheep cells. Twenty-five hundred heterophile antibody units will save a rabbit from a lethal pneumococcic infection of any type. The neutralizing antibody units and heterophile antibody units are not specific but are of value in all cases regardless of type. The patient should be tested for sensitiveness for the serum before administration. I do this by injecting .15 to .25 cc. of the serum intradermally and waiting fifteen minutes for a reaction; if none occurs, the serum is warmed to body temperature and given very slowly over a period of ten to fifteen minutes. I have had only one allergic reaction but no thermal reactions or serum sickness. For allergic reactions adrenalin one cc. of 1:1000 is used hypodermically and for thermal reactions heat is used for the chill, and tepid sponges and cold packs if the temperature rises above 105 degrees. If serum sickness occurs, adrenalin may be used for urticaria and analgesics for the arthralgia. Serum sickness should always be kept in mind in the differential diagnosis of postpneumonic febrile complications. If the patient be other than an adult, the dosage is calculated in the usual manner as for any other medication, but twice the usual dosage is used if the serum is given intramuscularly as it will probably have to be given in children. When it is given intramuscularly, the absorption is slow and the effects are not as marked. After the initial dose there is usually a rise followed by a fall in temperature, and there may be a slight rise after each succeeding dose. The amount to be given is the usual dose every four hours until the temperature falls to 100 degrees. Usually four to eight doses are required depending on the severity of the case. I have not used more than 80,000 units on any one case.

The cost of serum treatment is sometimes

considerable, but when its cost and the cost of oxygen are compared with the cost of surgical treatments, I can see no reason why both should not be used. The period of hospitalization for my cases averaged 12.5 days and they all were severe cases.

The death rate in the nine cases treated with serum was 22.2 per cent, as compared with a usual death rate of 36 per cent, and in the two cases which died, one was treated late and was in the hospital only a few hours while the other died of a ruptured blood vessel into the pleural space.

Complications will not be discussed here. However, I might add that I have never had a case of empyema following pneumonia and this probably is one of the most frequent complications.

CASE REPORTS

Case 1: J. A. B.—White man, age 65 years, admitted to the hospital February 23, 1935, following acute alcoholism. The temperature on admission was 100° which rapidly rose to 106° rectal on the second day. Leucocyte count, 19,500. Had consolidation of lower right lobe. No x-rays taken because of the patient's condition. Antipneumococcic serum was begun February 25, in doses of 10,000 units every four hours, 80,000 units being used. Glucose 10 per cent, 500 cc. intravenously, oxygen by tent and some cardiac stimulants were used. By February 28, the temperature was normal and remained so except for a rise to 102° rectal on March 5, which we thought was due to an infection on the upper left arm where hypodermics had been given. Recovery was uneventful and the patient was discharged March 9.

Case 2: H. J. P.—White female child, age six months, admitted to the hospital January 2, 1935, with a temperature of 101.6°. Leucocyte count, 20,300. X-ray showed right lobar pneumonia. Was treated symptomatically with blood transfusions and oxygen. Had its crisis January 8, and temperature began to rise and went to 104.6° on January 23. X-ray showed lobar pneumonia, left lower lobe. Serum and oxygen were given and temperature fell by lysis and was again normal February 2, and remained so until discharged February 10.

Case 3: G. S.—White boy, age seven years, was admitted to the hospital May 14, 1935, with a temperature of 105°. Leucocyte count, 18,200. X-ray showed bronchopneumonia on the right side. Serum treatment instituted immediately. Temperature fell to normal in two days and remained there. Discharged May 20.

Case 4: C. L. C.—White boy, age four years, admitted to the hospital October 29, 1935, with a temperature of 105°. Leucocyte count, 31,850. X-ray showed right bronchopneumonia or early lobar pneumonia. Serum was given on three different occasions to watch the temperature and each time it would fall after the use of the serum. Discharged November 7.

Case 5: E. W. S.—White male, aged 23, admitted to the hospital January 24, 1935, with a temperature of 103°. Leucocyte count, 16,000. X-ray showed lobar pneumonia in left lower base. Patient was typed and found to be Type VII. Oxygen was given. He was given 20,000 units of serum, January 26. The temperature fell to 101.4 at which time we began a specific type VII serum. The temperature would rise and fall until at 2:00 a. m., January 29, he was again given serum. By 12 o'clock, noon, January 30, his temperature was 97.2 and did not rise above normal again. Discharged February 10.

Case 6: E. M.—White male, age 28 years. Admitted to the hospital October 1, 1935, with a temperature of 103.4°. Leucocyte count, 20,100. No x-rays were taken. No oxygen was given. Serum treatment was given at once. On October 3, the temperature was still up to 103.8 and the next day fell to normal. Discharged October 10.

Case 7: G. E. G.—White male, age 21 years, admitted to the hospital September 25, 1935, with a temperature of 105.6°. Oxygen was given at once. Patient had a positive smear for diphtheria and was given antitoxin before admission. He had a very bad throat and blood cultures were positive for hemolytic staphlococcus aureus. Before the blood cultures were obtained he was given antistreptococcic serum because the leucocyte count was only 8,400. He was given blood transfusions almost daily and plenty of glucose intravenously. The temperature chart fluctuated between 97.4° and 106.6°, with many chills. He complained of pain in the

right lower chest at which time he was given antipneumococcic serum. He had an immediate reaction for which adrenalin was given. On October 5, he had what was apparently a crisis and the temperature fell to 96.4° axillary. He slept well, felt well, ate food, and from all indications was getting better. On October 6, he suddenly showed signs of collapse and expired. The morticians stated that a blood vessel had ruptured into the left pleura. This was found because the vessels would not take the embalming fluid.

Case 8: W. L. M.—Patient was a white male, age 71, admitted to the hospital November 1, 1935, in an irrational state. He had been ill for six days, and had a temperature of 96.8° which suddenly rose to 104°. Leucocyte count was 3,300. X-ray showed lobar pneumonia in upper right lobe. Oxygen was given and serum in half doses administered. Patient expired fourteen hours after admission. The history revealed the patient had been an alcohol addict for years. Autopsy showed consolidation of almost the entire right lung.

Case 9: R. H.—White boy, age five, admitted to the hospital June 4, 1935, with a temperature of 104° rectal. No x-rays were taken, no blood work was done, and no oxygen was given. Antipneumococcic serum was given. Temperature gradually fell and was normal by June 6, and remained so. Discharged June 9.

Summary: 1. Aside from careful bedside attention, a patient critically ill of pneumonia needs plenty of rest, freedom from pain, and some cardiac stimulation, especially at the time of the crisis. Digitalis in some form is good, but I sometimes use coramine.

2. Clinically, typing is not as important as it once was if polyvalent serum treatment is used.

3. I have not used artificial pneumothorax, but it has a place in selected cases and its field probably will become broader as it comes into more general use.

4. Oxygen should be given in all severe cases of pneumonia and should be given early. It ranks second only to the use of serum.

5. Serum if used early and with oxygen will greatly reduce the fatality of one of our most dreaded diseases.

BIBLIOGRAPHY

1. Finland, Maxwell: *The Use of Serum in the Treatment of Pneumonia.* Medical Clinics of North America, 18: 1093, January, 1935.
2. Kelly, Frank B: *The Treatment of Pneumonia.* Southwestern Medicine, 19: 35, February, 1935.
3. Riggins, J. C.: *Artificial Pneumothorax in the Treatment of Pneumonia.* Southwestern Medicine, 19: 207, June, 1935.
4. Hines, Lawrence and Bennett, David: *Artificial Pneumothorax in the Treatment of Acute Lobar Pneumonia.* Archives of Int. Med., 55: 100, January, 1935.
5. Jump, Henry Draper: *The Use of Serum, Oxygen, and Artificial Pneumothorax in the Treatment of Pneumonia.* Delaware State Medical Journal, 7: 65, April, 1935.

IODINE AND GOITER

Nature has been accredited with feminine gender, probably because of her many capricious acts. She doled out a niggardly portion of iodine to the earth and then perversely constructed man so that it was absolutely essential to his well being that iodine be present in the food he eats, the water he drinks or the air he breathes, Dr. William A. Plummer says in "The Quest for Iodine" in the June issue of *Hygeia.*

Without iodine we should be a race—if a race at all—of doltish, potbellied dwarfs, a hypothetic destiny suggested by the large number of cretin dwarfs in the population of any district in which the iodine supply is inadequate.

Setting about to correct the error, Nature gave the thyroid gland a blood supply five times as great as that of the kidney and nearly as great as that of the brain, thus giving it the best opportunity possible to pick up and utilize what iodine happens to be afloat. Next she so adjusted matters that a quantity of iodine the size of a grain of wheat will supply the needs of the thyroid gland of adult man for a year, the iodine being stored in the gland.

During the hundred and some odd years that have elapsed since iodine was first discovered medical opinion as to the indications for its use when goiter is once established has blown hot and cold, this way and that. Medicinal doses of iodine-containing preparations, however, should never be taken in an attempt to cure goiter except on the advice and under the direction of a physician.

Salt is a universally used food product and is the natural vehicle for the distribution of iodine as a prophylactic measure in regions where simple goiter is endemic. Iodine in the form of sodium or potassium iodide can be added to salt after it has been purified for table use.

VINCENT'S INFECTION*

By J. E. NELSON, D. D. S.
Bluefield, W. Va.

IN presenting this paper I do it with the one thought uppermost in my mind, that in all probability the treatment of this disease is held more in common by the physician and the dentist than is any other.

Some patients suffering from this infection consult their physician. Others see their dentist, and still others enlist the combined services of both their physician and their dentist.

Neither would I have you believe that I am trying to tell you anything about this infection, more than you already know, or that I have discovered or know any new cure.

It is partially my own opinion, based on my experience in combatting the disease, and partially the opinion of others that I have gained from them by engaging them in conversation on this subject.

Much has been said about an infection called Vincent's, and there is still much to be learned about it. Like pyorrhea, Vincent's infection has received many names the more adequately to describe the condition. Among the most common are: acute gingivitis, ulcerative stomatitis, necrotic gingivitis, trench mouth, Vincent's angina, septic gingivitis, etc.

Since this disease can manifest itself over almost any part of the oral cavity, irrespective of the fact that the gingival tissue usually shows the majority of lesions, the better term to be employed, and the one used by many of our foremost writers in the medical and dental profession, for the sake of description would be ulceromembranous stomatitis, yet with all due respect to this term, ulcerations are conspicious by their absence in many cases, and especially is this true in the early phases of the disease, but for the present the term may be considered the best for descriptive purposes.

Vincent's infection may be termed as an infectious disease of the mouth, producing a stomatitis or gingivitis, local or general, evidenced by congestion or a characteristic ulceration of the tissues in which a spirillum and fusiform bacillus are present, both of which belong to the class of anaerobes, thriving best in the absence of oxygen.

The symptoms of Vincent's infection vary as to the severity of the disease. The first symptoms in all cases are soreness of the gums and teeth, with the gingival margin especially, the interproximate spaces painfully inflamed and swollen.

The disease may be present in one or all of the following regions: posterior pharangeal wall, tonsils and fauces, gingivobuccal area of the first, second and third maxillary or mandibular molars, over the entire gingival tissue, over the gingival tissue covering an unerupted third molar, or it may just involve the gingiva of a single tooth.

Etiology: This disease is most frequently found in ill-kept mouths of individuals where sufficient care has not been exercised in cleaning the teeth, although its infectious character renders mouths with only slight irritation, particularly susceptible to attack through direct contamination with the specific organisms.

The disease may be contracted through food utensils, dishes, drinking glasses or cups, by kissing, or by any means of salivary contact.

Some of the chief predisposing causes of Vincent's infection seem to be low resistance, malnutrition, disease, lack of rest, and exposure. We seldom see a robust person who has an acute attack of this infection. The organ-

*Read before the Mercer County Medical Society, Bluefield, W. Va., November 21, 1935.

isms seem first to attack the tissue that has been injured or weakened and find lodgment more readily in areas that are not easily accessible to the tooth brush.

Individuals with active or retarded cases of pyorrhea, decayed teeth, retained roots, calculus, gingivitis, malocclusion, ill - fitting crowns, overlapping fillings and those whose mouths are in poor condition generally, seem more susceptible to Vincent's infection than those whose mouths are in a healthy condition. This does not imply that a perfectly healthy mouth cannot yield to infection, in fact we occasionally find a clean, healthy mouth involved in an acute attack, but this is the exception rather than the rule.

From a bacteriological standpoint, two types of organisms are found; namely, the Vincent's spirillum and the fusiform bacillus and as stated before, both of these are anaerobic. The typical fusiform bacilli are usually found on the surface of the ulceration and in the upper layers of the necrotic tissue, whereas the Vincent's spirochetes are found in the greatest numbers in the deeper layers in advance of the bacilli. Smears should be made from the affected regions, as a positive diagnosis is made by aid of the microscope.

An acute attack of Vincent's is followed by the appearance of ulcers covered with a greyish white membrane, which when removed exposes a red hemorrhagic surface. This condition is accompanied with increased salivation, headache, general discomfort, nausea, enlargement of the cervical and submaxillary glands and a peculiar and always recognizable sweetish metallic odor of the breath. The temperature ranges from 99 to 103 degrees; the teeth are loose, sore, and in some cases it is impossible for the patient to masticate food. A case may become so virulent that the entire oral cavity and the throat are involved. Pus does not appear except through a mixed infection of the pyogenic group of bacteria.

The milder and more common form is slower in its progress and remains on the surface not affecting the membrane deeply. This is the type more often found in individuals who give their mouths proper care and attention.

In this type of the infection, the patients suffer no acute pain; they usually complain of bleeding of the gums and general discomfort of the mouth. This chronic type is often associated with pyorrhea and in some cases mistaken and treated for it with very unsatisfactory results.

Treatment: The treatment of Vincent's infection should take into consideration all of the causative factors and their elimination, the treatment that has been used in the past has varied remarkably. Almost every drug that can be tolerated in the mouth either by local application or in a mouth wash seems to have been tried, as have also intravenous injections. Dr. MacDonald's experience with hundreds of cases in France where everything was tried locally, with and without arsphenamine intravenously, and from his experience the treatment with sodium perborate was best. The various drugs available for the treatment of Vincent's infection may be classified as follows: Caustics, germicides, specifics, oxidizing and detoxifying agents. Among the caustics are included trichloracetic acid, formaldehyde, copper sulphate, phenol, silver nitrate and bichloride of mercury. Some good results have been reported from the use of caustics; however, extreme care must be exercised in their use to prevent a serious destruction of the tissue, the danger involved in using this class of drugs.

General or universal germicides are contraindicated in the treatment of Vincent's infection. Those germicides which can be depended upon to eliminate the infection of the mouth are as destructive to the tissue as they are to the bacteria against which they are used.

Specifics: It has long been recognized that there are a few drugs which are of special value in treating diseases caused by the spirochetes. They are, as you all know, and you are much better acquainted with them than I am, certain forms of arsenic, mercury and bismuth, the first being used for nearly every disease of spirochetal origin. I have seen

cases of Vincent's infection that had been treated for weeks with little or no favorable response, which after consultation with the patient's physician the use of arsphenamine or some other form of the above mentioned drugs, the case would clear up almost as if by magic.

Oxidizing Agents: Past experience seems to indicate that the choice of drugs to be used locally for the control of Vincent's infection are oxidizing agents, and those recommended are potassium permanganate, sodium perborate, and hydrogen peroxide. Potassium permanganate is used in a solution of 1:5000, its principal objections being its extremely disagreeable taste and the discoloration resulting from its use. Sodium perborate has been used by many dentists and has met with a great deal of favor. A 50 per cent solution of hydrogen peroxide is also used by the dentist and may be prescribed for the patient to use at home. These drugs are used on the theory that an oxygen-liberating drug is needed to combat anaerobic organisms.

Sodium ricinoleate seems to stand out as a detoxifying agent and does not seem to possess some of the objectionable features of some of the other drugs available. Clinical evidence indicates that this drug gives very satisfactory results in the treatment of Vincent's infection and is valuable both as a prophylactic and therapeutic agent.

As far as I have been able to ascertain from my own experience and from the experience of fellow practicioners who have been fairly successful in the treatment of this disease, the following procedure may be outlined: First, the patient is given a cathartic and advised to get plenty of rest, to drink water freely, and to consume large quantities of orange juice and milk daily, and is placed on a well-balanced diet. Locally a two percent solution of chromic acid is used which is pumped down under the free gum margin and especially into the interproximate spaces, protecting the cheek, tongue and adjacent tissues with cotton rolls. This is allowed to remain for about two minutes and is neutralized with dioxygen. Sodium perborate and sodium ricinoleate are also used in the same manner except that cotton rolls and neutralizing agents are unnecessary. A mouth wash of a 50 percent solution of peroxide is provided and they are instructed to brush their teeth with this. We also instruct the patients how to brush their teeth with this and talk to them along the lines of mouth hygiene in general. This treatment is continued until all inflammation has disappeared. When this has been accomplished it is necessary to remove all ill-fitting crowns, overlapping fillings and calculus. The surfaces of all teeth are polished as smooth as we can possibly get them and the gums and interproximate spaces are painted with a solution of glycerinated tannin for protection and to stimulate granulation. Fillings are replaced, contact and articulation restored and the patient dismissed.

Prognosis: The prognosis is usually favorable. I have only heard of two cases that resulted fatally, and in my opinion, death could hardly be traced directly to Vincent's infection as both of these patients were in the advanced stages of tuberculosis. However, Vincent's infection received the credit for producing death.

The unfavorable symptoms are: rapid progress of anemia, subnormal temperature, progressive glandular swelling, edema spreading to the chest wall.

In conclusion I am glad to say that from all reports Vincent's infection is on the decline. Cases in this country have been reduced 48 percent in the past ten years. This I think, is partially due to the extensive campaign carried on by the American Dental Society in educating the public in the rules of mouth hygiene in general.

REFERENCES

James: *"Treatment and Control of Infection."*

"YOUR DOCTOR"

To live and die in the service of humanity—that is Medicine. To be a teacher and a bearer of the torch; to minister at once to the body and the mind and the spirit of man. The June *Hygeia* presents "Your Doctor" by Dr. Shailer Upton Lawton.

MEDICINE AND INDUSTRY*

By RALPH HOGSHEAD, M. D.
Montgomery, W. Va.

THOSE of you who are of a more scientific turn of mind and who have attended our meetings over the last fifteen years must realize that our every effort has been bent upon things scientific with little thought of the subsistence of life. The subject of making a living for ourselves and families has always been pushed to the background in spite of the fact that on various occasions, this subject has been approached only to be smothered by things scientific and pseudoscientific. This might have been right and proper, but I feel sure that this very thing has worked a hardship upon members of our society who are present at this time.

On various occasions it has been brought to the attention of the society that it would be a good thing to work out a minimum fee schedule for both private practice and for the list patients. It is a conceded fact that we use a sliding scale of fees for those in different annual income brackets in private practice. This is not so with the existing contracts. Those salaried employees of industry, in the upper salary scale, pay no more and often times nothing for the same plant and hospital service as do those who are earning the most meager wage.

If a sliding scale is a good thing in private practice, then, I think it would be well to have the same system function in contract practice, for then those receiving the larger and constant income would be required, under the contract, to pay more for their services. I have heard it said by a mine official, who was receiving a good salary, that he had never paid the "damned" doctor anything and more than that, he was not going to do so, yet he did not fail to call upon the services of that same doctor whenever he needed his services for himself or family. What people get for nothing is very little appreciated; therefore, the service rendered by this physician was very much cheapened in the eyes of the one to whom the services were rendered.

This has received no consideration and as a result the companies in our county have continued to reduce the stipend which at the maximum was never too high. "Load and fire at will", has been their golden rule and at present, one company that is well known by you all, persists in checking their employees the usual rate and hiring the doctors on a monthly salary basis. The aggregate of said salaries is far below the gross check-off, and to rub it in, they have the doctors furnish half of the drugs in spite of the fact that their stipulated salaries have been cut on three different occasions in the last two or three years and at the same time there have been added to the payroll additional men in the form of laborers to be cared for.

This is not as it should be, for our West Virginia State Medical Association went on record at the Parkersburg meeting in 1932 as disapproving this type of contract practice. The state society fought the Nolan case and made a company in an adjoining county pull in its horns and restore the full check to the doctor who earned it and who was responsible for the treatment of the employees. Yet we in Fayette county stand by and permit the same thing to exist within our domain and say nothing, letting our fellow practitioners and society brothers be exploited by big industry instead of trying to help emancipate both the doctors and the employees of big industry by helping the former to regain what is rightfully due them and at the same time help the latter by enabling them to have the power by

*Read before the Fayette County Medical Society at Oak Hill on May 21, 1935.

a majority vote to say to whom his money shall go for medical protection.

I have done list practice and I feel that any one doing it is entitled to all that those whom he serves are putting out for that purpose. Then, and only then, can he render his best service.

Not long since, I was consulted by one of my colleagues concerning some phases of medical practice and in the course of conversation he told me that the company by which he was employed had become very much interested in his welfare as to how he should have more check-off (this was one of the companies that had not been feeding the Community Chest fund from the earnings of the physicians). This just about knocked him cold as this was the first time his personal interests had been considered by the company in the many years which he had spent with them. I told him at that time that there was some selfish motive in the air and that I thought he would see it materialize in the near future. Not many days after this the Kanawha Medical Society passed a resolution with a vote of 71 for, to 10 against, to dispense with the present form of contract hospital check-off in order that it might give the staff physicians a break in getting something for their services which has been rendered gratuitiously to list patients in consideration of their being on the said staff and to place the State Compensation Commission in a position to function as it was originally intended; *i.e.*, to give those who are injured in industry the right to be hospitalized in any hospital of their choosing and select any surgeon they may wish to render such service, this service to be paid for through the Compensation Department. Evidently the above company had sensed what was in the minds of the active membership of the state organization and was trying to feel out one of the members.

As you well know, the result of the act of the Kanawha society was that the Council on January 17, passed a resolution condemning the above-mentioned contract hospital practice as it now exists.

Those of you who have attended the annual meetings of the West Virginia State Medical Association in the past few years and have scrutinized the president's addresses, realize that organized medicine in West Virginia has been keeping its shoulder to the wheel in an endeavor to better the condition of the average practitioner in this state. This movement was started, as was noted above, at the Parkersburg meeting in 1932 by the then president of the Association, Dr. A. H. Hoge of Bluefield, and carried on by his successors until the culmination of those endeavors at the recent session of the West Virginia Legislature when they passed a Liberalized Workmen's Compensation Act wherein Subsection (c), Article IV, was amended to require that "when an employee is entitled, under contract connected with his employment or by reason of a hospital subscription list, to medical, surgical, dental, or hospital treatment, for injuries sustained in the course of his employment, compensable under the provisions of this chapter (such medical, surgical, dental, or hospital treatment) *shall* be paid for from the compensation fund, as herein provided."

This amendment makes it mandatory that the employer through his payments into the compensation fund, bear the cost of medical, surgical, dental and hospital treatment for compensable injuries, rather than force the hospital maintaining a subscription list practice to absorb the cost of same.

Many a just cause has met its waterloo after victory had apparently been assured because those most vitally affected did not follow up their victory and see that terms of agreement were met to the full extent. Therefore, it behooves each one in the sound of my voice to contend for his rights under the recent act and demand that he receive just compensation for his part in the care of these compensable injuries.

One other thing that I would like to mention, at this time, and it, too, is somewhat along the line of following up the victory. It is with reference to your activity as a member

of your association and especially of your county society.

We are all more or less prone to think that if we affiliate ourselves with some civic or fraternal association and pay our dues and attend meetings occasionally, we have fulfilled our every obligation. Nothing is further from the truth. To become affiliated with the county association is only one of two steps. The second, of much greater importance, is to take an active part in its affairs.

If organized medicine is to guard its interests effectively, its members must work and sacrifice toward that end. This means working with or accepting active positions on the various committees; doing some straight thinking and acting on the problems that present themselves.

It is not enough to exchange greetings with our colleagues and dig down into our jeans for a contribution now and then, in the way of our annual dues. Organized medicine needs and must have the personal interest and vitality that only its members can give.

Societies — medical and otherwise — are supposed to reflect the ideas of their constituents. Therefore, make yourself heard. Do not wait indefinitely for someone else to take the initiative. Take it yourself!

Only by means of vigorous mass action can we be assured of protection against those who seek to overthrow private practice and against all who seek to twist the present system of medical service into a shape better adapted to their own needs.

This action can only be taken through the county medical society. The strength of a political party lies in its county committees, not in its national headquarters. The same is true of all large organizations, including medicine.

There is one thing worth remembering— it is not enough that a few of us become fired with the idea of acting instead of talking. The great majority must do likewise. It must be a collective move.

Our county society is a representative association, depending for its power upon each one of us. Therefore, let us guide our footsteps toward its meetings more often and in greater numbers, with the determination to do something constructive, rather than refrain from attending our societies. Then, if things do not pan out exactly to our liking, offer constructive rather than destructive criticism to replace the things you do not like.

Summary: 1. Our highest ambition should be to render the best possible service to our client, but never overlooking the fact, while so doing, that a professional man as well as the laborer is worthy of his hire.

2. We should work as a society not only for our elevation along scientific lines, but also to the end that all may get a square deal economically as well.

3. When we have accomplished something, whether scientific or economic, let us not forget that the latter may be lost if we do not guard the accomplishment zealously.

4. It is not enough merely to pay your annual dues into your society, but you should lend any aid you can in furthering the interests of your colleagues in any way possible; for only in so doing, can we derive the full measure of benefit from our organization.

"THE COUNTRY DOCTOR"

When the Dionne quintuplets were born, and a country doctor officiated at the epochal event, it was inevitable that the name and fame of the country practitioner should be coupled with that of the famous babies. Their first starring vehicle has recently been released by 20th Century-Fox Film Corporation under the apt title, "The Country Doctor."

In the June *Hygeia* the film is reviewed and several of the scenes are pictured, showing the leading stars and the babies, who are enjoying themselves to the utmost.

"The Country Doctor" fictionizes the fact that one of the major triumphs of modern medicine has been achieved by a simple country doctor in the routine of his daily work, far from glittering accessories. He met the responsibility as thousands of his compatriots in general practice are meeting similar challenges day by day.

A FATAL CASE OF INFANTILE PFEIFFER'S BACILLUS (Hemophilus Influenzæ) MENINGITIS

By W. MERLE WARMAN, M. D., AND ROBB SPALDING SPRAY, PH. D.
Medical School, West Virginia University
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It is quite customary to report in the current literature only those cases displaying a favorable termination. Admitting the value of this practice, it would seem of equal utility, though less dramatic, to report occasionally those which failed to respond to currently accepted modes of treatment. The case reported herewith falls in the latter category.

Meningitis, as is well known, falls into two general classes—the epidemic and the sporadic. Of the latter, two forms may be recognized conveniently as the primary and the secondary. The secondary form is frequently observed to follow as a complication of an indiscriminate variety of primary respiratory infections.

Regardless, however, of the etiology of the primary infection, the actual cause of the secondary meningeal involvement in a given case may display no apparent direct relationship. Thus pneumococcus, streptococcus, staphylococcus or influenzal meningitis may follow the most diverse of primary infections.

In the case of epidemic influenza, now commonly regarded as probably incited by a filtrable virus, a variety of organisms may be expected in the spinal fluid of a subsequent meningitis. Among these may be found the Pfeiffer's bacillus (H. influenzæ), although contrary to the earlier views, this organism is not at present considered to have any direct etiologic significance in influenza, *per se*.

On the other hand however, it is a matter of common knowledge that H. influenzæ is a definitely pathogenic organism, and is capable of inciting a secondary meningitis following any one of a number of primary respiratory infections. Moreover, it seems generally agreed at present that H. influenzæ meningitis occurs even more commonly without regard to any recognizable primary specific infection whatsoever.

It would appear at least questionable then, whether one may properly adhere rigidly to any systematic classification, since in the absence of a history of a primary focus of infection definitely ascribed to H. influenzæ, such a specific meningitis would appear to be actually a primary H. influenzæ meningitis. At the same time, it would also appear to be secondary to the primary respiratory condition, even though the latter condition has a definitely different etiologic cause.

These considerations among others lead us to question the desirability of the term "influenzal meningitis", and to use rather the title, "Pfeiffer's bacillus (H. influenzæ) meningitis."

This opinion is supported by the fact that during the influenzal pandemic of 1918-1920, no significant increase of meningitis was observed. Rivers and Kohn[7] (1931) express a similar attitude as the result of a study of 171 cases, considering 74 per cent as probably primary infections. Further support is obtained from the relatively limited literature on the subject which covers only some 500 case reports of such character as to offer acceptable evidence.

Regardless of these considerations, the disease entity is peculiarly restricted to the earlier ages, and has a fatality rate approaching 100 per cent. Griffith and Mitchell[2] (1926), and Morse[4] (1926) reported no recoveries. Rivers[9] (1922) observed a mortality rate of 92.25 per cent, and Bloom[1] (1931) reported 92.05 per cent. Serial studies of consecutive cases as reported by Neal[5] (1924),

Rivers[6] (1922), and by Jenks and Radbill[3] (1931), showed a rate of 97.7 per cent.

In infancy, in which unfortunately some 80 per cent of cases occur, recoveries appear to be nil, or at least so rare as to class this condition along with tuberculous meningitis of infancy as one of the most hopeless of conditions to encounter in general practice.

While such information then, is of little consolation to the parents, it is exceptionally satisfactory to the attending physician to be definitely informed as to the specific organism involved. Such knowledge may then be cited, together with the general information gained from the literature on this infection, as evidence that our present forms of treatment offer little, if any, hope of recovery.

It is particularly for these reasons that we offer the following case report:

Gerald L., (Case No. 17,648), a white male child, 18 months of age, was admitted to the Monongalia County Hospital on February 25, 1936. Signs on admission were those of fever, restlessness, cyanosis and dyspnea.

About one week prior to his hospitalization, illness was initiated by what was described by the parents as a "cold". Axillary temperature of 104.2 was reported two days prior to hospital admission. Pronounced restlessness and tossing of the head from side to side was noted. The patient had pulled out considerable hair from the right side of the head. Both eardrums were perceptibly inflamed.

On the day of admission, the patient suffered a convulsion. At this time the axillary temperature was 106. He was very cyanotic. There was some internal strabismus, and a slight rigidity of the neck. There was paresthesia to the extent that the slightest movement elicited a cry of pain. The lips were dry and cracked. No injection of the pharynx was observed.

An area of tubular breathing, and a dullness to percussion was noted over the left lower chest. Râles were heard in this region, and also in the right midchest posteriorly. The patient was very dyspneic. The abdomen was negative. Kernig's sign was positive. In consultation with two other physicians, a diagnosis of bronchopneumonia was made.

Three days after admission both eardrums were found to be markedly injected and were opened. Microscopic examination of the escaping purulence revealed enormous numbers of about equal proportions of a gram-positive coccus and a very tiny gram-negative short bacterium. Fairly active phagocytosis of both forms was observed.

Meningeal signs increased and on the fifth day from admission (March 2) a spinal puncture gave an opalescent fluid under slight pressure. A cell count of 324 was reported from the hospital laboratory. Repetitions of puncture on March 4 showed 437 cells, and on March 5 the amount was 912.

On the basis of hospital laboratory observations, a tentative conclusion of pneumococcus meningitis was rendered. However, a sample portion of the fluid of March 4 was referred to the department of bacteriology of the University Medical School. Examination in our hands failed to show any characteristic gram-positive capsulated diplococci. It showed on the contrary, a great abundance of definitely bacillary, non-capsulated, tiny gram-negative rods. Some of these were observed within the polymorphonuclear leucocytes, although phagocytosis did not appear to be particularly active. These organisms were identical in morphology with the organism observed in the purulence from the ears.

Routine cultures were made to fresh human blood "vitamine-agar", to hemoglobin "vitamine-agar", and to plain nutrient agar. After 24 hours incubation, growth was abundant on the fresh blood agar, but was entirely suppressed on both the hemoglobin and the plain nutrient agar.

These observations alone, or together with the morphology, clearly indicated the Pfeiffer's bacillus, since the hemoglobin agar, lacking the "V" factor, failed to support growth. On the other hand, the fresh blood agar which contains both the "V" and the "X" factors, both essential to initial isolation, permitted abundant growth.

Absence of growth furthermore on the hemoglobin "vitamine-agar", ruled out the other pyogenic organisms common to sporadic infectious meningitis, since this medium supports excellent growth of pneumococcus, streptococcus, meningococcus and gonococcus.

The colonies of the organism on the fresh blood "vitamine-agar" at 24 hours were tiny pin-point, regular translucent, and entirely inactive as to hemolysis or greening of the medium. Stains from these colonies showed the tiny gram-negative rods, having definitely no possible resemblance to pneumococcus, or to any of the other pyogenic cocci.

A distinctive odor of indol was clearly perceptible on the blood agar plates. This was confirmed by

moistening a strip of filter paper adherent to the lid with Ehrlich's reagent. This promptly showed the characteristic rosy tint of the Ehrlich reaction for indol.

Immediately upon receipt of the spinal fluid specimen, a white mouse was inoculated intraperitoneally with one c.c. This mouse survived until the fourth day, again eliminating by its prolonged survival, the probability of pneumococcus. (Unfortunately this animal died during the night, and the body was not in condition suitable for further study when observed). The delayed death however, tends to support further the diagnosis of Pfeiffer's bacillus, since it is in keeping with the known moderate virulence of this organism for the mouse.

On March 8, a second spinal fluid specimen was submitted to us. At this time the fluid was quite turbid, and showed a delicate, but definite, "spiderweb" fibrin clot, some two hours after withdrawal and exposure at room temperature. The cell count was about 1200 with some 95 per cent polymorphonuclear leucocytes.

Microscopic examination again revealed exclusively the same gram-negative rods. Phagocytosis appeared slightly accelerated at this time, although decidedly limited as contrasted with the enormous and apparently increasing numbers of extracellular organisms.

Cultures again showed results identical with those of March 5. No organisms other than those observed in the fluid were obtained in culture.

We referred above to the examination of smears of discharge from the ears. Unfortunately, no material was obtained for cultivation. Morphologically it would appear that the organisms observed were most probably a staphylococcus and the Pfeiffer's bacillus.

The order of appearance of symptoms would not permit us to determine definitely whether the meningitis was primary or secondary to the involvement of the ears.

On the basis of these collective microscopic and cultural findings, a report of Pfeiffer's bacillus (H. influenzæ) meningitis was rendered.

In view of recent limited observations, it was suggested that an attempt be made to obtain and use an anti-Pfeiffer serum, for whatever hope it might offer. However, considerable time had now elapsed, due particularly to the preliminary reports of pneumococcus, and the meningeal involvement was too far advanced to expect much, even of a potent antiserum.

After some correspondence involving further delay, a polyvalent anti-Pfeiffer serum was obtained from one of the leading biological houses. This was administered by spinal puncture daily on three occasions. Thirty c.c. were given in three doses of 10 c.c. each. Some 15 c.c. of spinal fluid were previously withdrawn.

No reactions, either favorable or unfavorable, were observed subsequent to serum administration. The spinal fluid increased in turbidity, until on the last puncture, March 14, it was creamy yellow and thickly purulent.

On the last two days, March 13 and 14, a peculiar distribution of ecchymotic lesions was observed on the palms of the hands, on the soles of the feet, and on the ears. No similar lesions were observed elsewhere on the body. These might be considered an indication of an advanced bacteremia. The condition of the patient apparently did not warrant the advisability of blood cultures.

The patient grew gradually weaker, and death occurred on March 19, on the nineteenth day after admission to the hospital.

Discussion: We have here the report of a case of Pfeiffer's bacillus (H. influenzæ) meningitis, possibly secondary to a "cold", developing into a definite bronchopneumonia.

Failure of initial laboratory recognition of its specific etiology delayed diagnosis and specific serum treatment to such date that little hope could be held for the patient, even granting the potency of the antiserum.

Since Pfeiffer's bacillus (H. influenzæ) meningitis appears statistically to be probably fourth in order of importance as a cause of meningitis of infancy it is important that its early diagnosis be made possible.

We have outlined the procedure by which this organism may be readily isolated and identified.

The death of the patient is in keeping with expectation, there being very few well authenticated recoveries from this specific infection recorded under any system of treatment.

REFERENCES

1. Bloom, C. J.: 1931, New Orleans M. & S. Journ.; 83: 455.
2. Griffith, J. P. C., and Mitchell, A. G.: 1926,

"*Diseases of Infants and Children*", W. B. Saunders Company.
3. Jenks, H. H., and Radbill, S. X.: 1931, Arch. Pediat. 48: 1.
4. Morse, J. L.: 1926, "*Clinical Pediatrics*", W. B. Saunders Company.
5. Neal, J. B.: 1924, J. A. M. A.: 82: 1429.
6. Rivers, T. M.: 1922, Am. Journ. Dis. Child.: 24: 102.
7. Rivers, T. M., and Kohn, L. A.: 1931, Journ. Exp. Med.: 34: 477.

ATELECTASIS—ITS RAPID DEVELOPMENT AND CLEARING IN THE CASE OF A VEGETAL FOREIGN BODY (Seed From Citrus Family) IN THE LEFT MAIN BRONCHUS.

By SOBISCA S. HALL, M. D., AND HARRY V. THOMAS, M. D.
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CASE REPORT: F. D., age nine months, Cook Hospital, Chart No. 20526. Presents with a history that about 1:00 p. m. on October 29, 1935, while playing on the floor of his home with various articles, including buttons, beans and seeds from grapefruit, orange and lemon, he suddenly choked. The mother hurriedly seized the child and put him through contortionistic maneuvers known only to scared mothers, and in a few minutes the child's choking ceased, his color became good and he was apparently comfortable. However, he had subsequently developed a "funny wheeze." At the height of the excitement, Dr. A. H. Stevens was called, who immediately evaluated the story and took the child to Dr. C. L. Holland's office for examination. From the time the child choked until he was in Dr. Holland's office was less than thirty minutes.

Examination at that time showed very definite limitation of motion over the left chest with almost a complete absence of breath sounds with an associated diminution in the normal percussion note over the left chest. No râles were heard.

Because of the history of a probable foreign body in the tracheobronchial tree any one of which might be in the air passages, it was considered wise to take the child to the hospital and obtain x-rays of the chest. He was taken to Cook Hospital and within one and one-half hours after the inspiration of the foreign body, x-rays were obtained showing the whole left chest to be atelectatic. A tentative diagnosis of a foreign body in the left tracheobronchial tree was made and the little fellow was taken to the operating room for bronchoscopy.

FIG. 1. D. C., 10203. H. & T. This x-ray was made one and one-half hours after the inspiration of the foreign body. It is of special interest as it shows how quickly lung changes can be initiated where the bronchus is completely occluded.

On bronchoscopy, there was found an impacted seed, either an orange, grapefruit or lemon in the left tracheobronchial tree, completely occluding the entire left main any apparent difficulty to the child. The

little fellow was returned to the ward in good condition.

There was no laryngeal obstruction nor any apparent tracheobronchitis following the incident. X-rays were made of the chest about 16 hours following the removal of the foreign body and at this time the chest had cleared and chest findings were entirely normal on physical examination.

The physical examination at the time of admission as noted by Dr. Holland is as follows:

"A well developed and well nourished child weighing 18 pounds, seven ounces. The choking had subsided and the color was good.

"*Head:* Normal in size, evenly developed. Fontanelle level. Nares wide and clear. Ear

FIG. 1-A. D. C., 10203, H. & T. This x-ray was obtained sixteen hours after the removal of the foreign body. This is of a special interest and it shows how quickly the lung field again becomes essentially normal after the removal of an occluding foreign body from a main bronchus.

drums normal. Mouth is closed. Mucous membrane normal. He has four teeth.

"*Chest:* Normal in contour. On auscultation respiratory murmurs over the whole of the right lung were much increased. Over the whole of the left lung the respiratory murmur was greatly diminished. In the upper portion of the lung it was very faint.

"*Abdomen:* Level. Spleen not palpated. Upper border of the liver dullness in fifth intercostal space. Lower border of the liver one cm. below the costal margin in the nipple line.

"*Genitals:* Normal.

"*Deep and Superficial Reflexes:* Normal. bronchus. This was removed easily without

"*Lymph Nodes:* Normal throughout.

"*Extremities:* Normal.

"*Spinal Examination:* Normal."

Comment: This is of special interest because of the rapid development of alectasis (within one and one-half hours after the inspiration of the foreign body) and the rapid restoration, on x-ray and clinical findings, of his left lung following bronchoscopic removal of the foreign body. This represents a fortunate outcome in the presence of what might have been a most serious complication. The child was discharged from the hospital on October 31, 1935, apparently entirely normal and he has had no further difficulty.

95 Fairmont Ave.

FIGHTING CONTAGION

There is only one way to prevent contagion and that is by isolating the child at the first sign of illness, Dr. H. G. Bull points out in "Don't Let It Spread!" in the June *Hygeia.*

Have it understood that any child who seems indisposed must stay in bed until you know what ails him; and in the meantime keep all the others out of his room.

Children are reasonable beings after all, and it does not take them long to see that such a course is the right one.

Nose and throat infections are most contagious in their very early stage, even before you feel that the child is really ill enough to be kept by himself or be put to bed.

Whenever the children seem off the hooks—headachey, listless and tired, vomiting, with eyes or nose running—check up their temperature. Even if it isn't above normal and they show any of these symptoms, put them to bed, keep the others out and give the doctor a ring.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Fever which lasts for weeks or even years and in spite of the most careful investigation remains unexplained is one of the doctor's most perplexing problems. Wherever physicians gather and exchange shop talk unexplained fever is a commonly discussed problem, but this subject is seldom dealt with in medical literature as an independent topic and in a comprehensive way. Hamman and Wainwright of the Johns Hopkins Hospital and University felt that importance of the subject merits independent treatment and set out to gather and analyze the records of cases with the diagnosis of obscure fever. Extracts of the article based on their studies are here presented, including their very cogent remarks on the rôle of obscure fever in tuberculosis.

Diagnosis of Obscure Fever: With the aid of associates the records of 90 cases of fever of unexplained origin occurring in private practice and in the wards of the Johns Hopkins Hospital were ferreted out. These cases are not regarded as units of statistical calculation since their number is too small but rather as illustrations of the peculiar features of each case.

For convenience the cases were divided into two groups, the first comprising those with low-grade fever of from 100° to 101° F. with light symptoms; the second consisting of cases with higher fever and symptoms which usually incapacitated the patient and confined him to bed.

Patients of the first group complain of weakness and lassitude, of lack of energy and endurance. The zest of life is gone, they whip themselves up to undertake tasks formerly done with ease, they are exhausted. Some have headaches, others digestive symptoms or palpitation of the heart. All are ill at ease, apprehensive and depressed mentally and physically. Many have consulted successive physicians and have undergone various surgical procedures yet they feel no better and the fever persists. Such cases finally group themselves into these classes.

1. In a certain number, about 40 per cent, characteristic signs and symptoms develop which permit us, at last, to make an accurate diagnosis.

2. In another group, about 50 per cent, the symptoms slowly disappear, the fever subsides and the patients get well, although we are never able to arrive at a well-supported diagnosis.

3. In about 10 per cent, the symptoms and the fever persist for many years and in spite of the most careful observation and painstaking examinations no satisfactory diagnosis is ever reached.

In the series studied an accurate diagnosis was finally made upon 10 patients as follows:

Malta fever	3 cases
Pulmonary tuberculosis	2 cases
Hypernephroma	2 cases
Hodgkin's disease	1 case
Tertiary syphilis	1 case
Ureteral stricture	1 case

In six other cases a presumptive diagnosis was made as follows:

Tuberculosis—pulmonary.
Tuberculosis—mesenteric glands.
Tuberculosis—perirectal abscess.
Rheumatic fever.
Malta fever.
Multiple myeloma.

The authors detail a number of case histories including a striking case of Malta fever that remained undiagnosed until the patient herself, more than two years after the onset of the fever, answered an inquiry by stating that she was splendidly well and suggesting that her illness might be traced to milk from a herd of registered Holsteins infected with "contagious abortion of the most virulent type." Tests of the serum were then made, the results of which dramatically confirmed the diagnosis of Malta fever.

Under the heading "Specific Infections" the authors have the following to say concerning tuberculosis.

"Tuberculosis more frequently than any other of the chronic infections causes a slight, long-continued fever. Indeed such a slight fever is a characteristic, almost distinctive, feature of the disease. In addition to this the patients complained of the very symptoms which are precisely those usually complained of by the tuberculous, namely, weakness, fatigue, lack of endurance, tachycardia, sweating and so on. Furthermore, all physicians know that often it is very difficult to discover the location of a tuberculous lesion which may be causing these general symptoms. Therefore, it is not at all surprising that under these circumstances tuberculosis was always suspected, nor is it in any way remarkable that very often this diagnosis was made. And yet in not a single instance was the diagnosis securely established. We have had the opportunity to observe some of these patients at intervals over

many years; others have spent long periods at tuberculosis sanatoria and resorts. Opinions about them differ; some physicians are convinced they have tuberculosis, others are equally sure they have not. The conclusive evidence, namely, the demonstration of tubercle bacilli, has never been furnished. In the light of this experience we are prepared to defend the statement that, whereas tuberculosis is the most common cause of long-continued slight fever, it is seldom the cause of *unexplained*, long-continued, slight fever.

"When a patient with low fever comes for examination complaining of general malaise, weakness, exhaustion and tachycardia, the physician at once makes a tentative diagnosis of tuberculosis. With this possibility foremost in mind the examination is planned especially to disclose the location of the tuberculous lesion. It is searched for carefully and assiduously, and if the search be thorough and often repeated, the tuberculous lesion seldom escapes detection. However, now and again it is overlooked and the memory of these unfortunate occasions is so bitter and tenacious that the physician is apt to diagnose tuberculosis whenever he is unable to discover any other satisfactory explanation for the symptoms. We all recall these sad experiences. Slight fever, slight constitutional symptoms, negative examinations, negative röentgenograms; later, an attack of pleurisy with effusion, a manifest pulmonary tuberculosis, tuberculosis of the mediastinal or mesenteric glands, etc.

"No one faces lightly the possibility of a repetition of these errors and therefore perhaps we are apt to be too cautious. It is as grave an error to diagnose tuberculosis when it does not exist as it is to miss it when it is present. It is right and proper that tuberculosis should always be suspected as the cause of unexplained fever and the suspicion tenaciously held until some other cause for the fever is discovered. However, the diagnosis should never definitely be made upon circumstantial evidence alone.

"In this connection we wish to call attention to a valuable test which is too often neglected, namely, the tuberculin test. The intracutaneous tuberculin test is easy to perform and utterly dependable in the information it gives. A reaction indicates tuberculous infection, not tuberculous disease, and therefore is of little value in diagnosis. But a failure to react indicates, aside from few well-known exceptions, the absence of tuberculous infection and this information may be of the greatest value in diagnosis. From 60 to 70 per cent of all adults will react to the intracutaneous tuberculin test with a dilution of 1 to 1000, but among those who fail to react there will be many who at one time or another may have symptoms which arouse a suspicion of the presence of tuberculosis. Under these circumstances to demonstrate that the patients are insensitive to tuberculin will definitely and at once dispel the suspicion. To illustrate how precisely at times the test may guide diagnosis we recall an experience published some years ago.

"In the spring of 1919, during the wane of the influenza epidemic, we were consulted by two young women, one within a few days of the other. Both gave similar histories, a fairly acute onset of the illness characterized by cough, sputum, loss of weight and strength and a little fever. Both showed a small area of consolidation in an upper lobe. The diagnosis lay between a patch of unresolved pneumonia and tuberculosis. One reacted to the intracutaneous tuberculin test whereas the other showed no sensitiveness to tuberculin even when a 1:100 dilution was injected into the skin. It was our opinion that neither was tuberculous, but the one we felt confident we could dismiss without concern, the other we held under careful supervision. The patient who failed to react to tuberculin made a prompt and lasting recovery; the other patient failed to improve and a few months later tubercle bacilli appeared in the sputum."

Diagnosis of Obscure Fever by Louis Hamman and Charles W. Wainwright, Bulletin of Johns Hopkins Hospital, Feb., 1936.

SUNSTROKE HAZARD

Sunstroke is usually due to an interference with the evaporation of perspiration from the skin. It occurs only when a person is exposed to three climatic conditions at the same time: sunlight, highly humid atmosphere and an absolute dearth of breeze, declares Dr. Edward F. Hartung in the June *Hygeia*.

The first step in avoiding sunstroke is to avoid exposure to direct sunlight. It is not the ultraviolet rays of the sun but the infra-red or heat rays that produce sunstroke. During very hot weather the head should always be covered in direct sunlight.

The next important measure is avoiding sunstroke is to be sure that there is an adequate intake of water and therefore an adequate amount available for perspiration. The amount of water lost on a hot day is astonishingly large.

PRESIDENT'S PAGE

Our Sixty-ninth Annual Meeting will be held at Fairmont on June 8, 9 and 10, 1936. In addition to the splendid scientific program which has been arranged, and which is published elsewhere in this issue of the JOURNAL, we will gather this year to dedicate our monument to the Association Founders who formed the "Medical Society of West Virginia" at Fairmont on April 10, 1867.

The doctors of Marion county are leaving no stone unturned to make the coming meeting one of the best in the history of the Association. All plans have been completed for parking, for the golf and trap-shooting and skeet tournaments. The Marion County Medical Society assures a royal welcome to every visiting doctor in attendance.

A fine program and an interesting series of social functions has been also arranged for the ladies through the Woman's Auxiliary. The Auxiliary headquarters will be established in the Red Cross building directly across the street from the Fairmont Hotel. Doctors are urged to bring their wives with them to Fairmont to enjoy the friendship and hospitality of the Convention City.

The most important feature of our state meetings is the scientific program. Next in importance is the friendly discourse among physicians who gather once each year to renew old acquaintances, to meet new friends, to swap yarns and case histories with their confreres. The Scientific Committee has so arranged the scientific program that there will be much of interest and importance to every doctor in attendance, with sufficient time left over for the social amenities which mean so much to the success of our conventions.

The West Virginia State Medical Association is known far beyond the borders of this state for its successful annual meetings. I am sure the Fairmont Convention will more than uphold this reputation. Let us all turn out at Fairmont, attend the scientific lectures, mingle with our fellow practitioners, absorb the convention atmosphere, and return home better and happier doctors.

Charles G. Morgan

President

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P. O. Box 787
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THE FAIRMONT MEETING

Everything is now in readiness for the Sixty-ninth Annual Meeting of the West Virginia State Medical Association which will be held in Fairmont next Monday, Tuesday and Wednesday, June 8, 9 and 10, 1936. The complete program for the Fairmont convention is published elsewhere in this issue of the JOURNAL, together with complete information relative to tournaments, social functions, business sessions and other convention details.

Featuring the Fairmont session will be the dedication of the Founders' Monument at Rivesville on Tuesday afternoon, June 9, at 4:30 o'clock. The dedication exercises, combined with one of the best scientific programs the Association has ever sponsored, will undoubtedly bring out a record attendance.

Another feature of the Fairmont meeting will be the trap shooting and skeet tournaments, with suitable prizes for the winners. Doctors who go in for trap-shooting and hunting are urged to bring their guns along to Fairmont to help inaugurate what will probably become an annual convention event.

On behalf of the Marion County Medical Society, we welcome the doctors and their wives to Fairmont for a profitable and pleasant three-day session. Also, we wish successful meetings for the West Virginia Heart Association, the West Virginia Society of Obstetricians and Gynecologists, and the West Virginia Society of Industrial Physicians and Surgeons, which organizations will meet conjointly with the Association at Fairmont.

Although a separate program of the Fairmont meeting will be mailed to each member in the next few days, we suggest that you turn over several pages and peruse the completed program published in this issue of the JOURNAL.

SOCIAL SECURITY IN WEST VIRGINIA

As we go to press, it appears that the special Legislative Committee on Social Security will make its report to Governor Kump on June 1, and that a special session of the West Virginia legislature will be called for the purpose of enacting Social Security legislation about June 15.

From all advance information that can be gathered incident to the report of the special committee, it appears that the special session of the legislature will be called upon to act on the following phases of the Social Security program:

1. Pensions for the aged.
2. Aid for dependent children.
3. Aid for the blind.
4. Maternal and child welfare.
5. Increased aid for crippled children.
6. Adult physical rehabilitation.

From the standpoint of the medical profession, the adult rehabilitation program is probably the most important and far-reaching of the entire social security program. There seems to be a definite assurance that the committee will recommend an appropriation of $200,000 or more annually for the purpose of making permanent the adult physical rehabilitation program originally sponsored by the West Virginia Relief Association. This original program, after several months of unusually successful operation, was stopped in December, 1935, when federal relief funds were withdrawn from this state.

There are two features of the adult physical rehabilitation program which make it of unusual interest to the medical profession. First, the successful administration of such a program will open up an entirely new and

much needed field of enterprise. Second, when the program is completed, many heads of families will be restored to gainful employment and will again resume their confidential relationship with their family physicians. All rehabilitation work will be confined to persons who are now on direct relief.

The experiment in adult physical rehabilitation carried on by the West Virginia Relief Administration last fall is largely responsible for the recommendation that the program be made a permanent part of the social security law. Under the direction of Mr. Charles E. Ritter, and guided by the Relief Advisory Committee of the Association, a total of 120 adult rehabilitation cases were handled. Of this number, 82.5 per cent have since returned to gainful employment. Over a 10 year period, the saving on each successful rehabilitation case is 1500 per cent to the state on its original investment.

It is understood that the legislation now being drafted by the Social Security Committee does not contemplate the raising of any revenue over and above that already available. In other words, no new taxes will be levied to pay the costs of administering the enlarged functions of the social security program. It is thought that surpluses accummulated by the State Liquor Commission, together with other funds now available, will adequately carry the excess load. It is estimated that $4,000,000 will be used annually to match outright federal grants.

The administration of the State's social security program will be handled by a special council of five members, and one member of that council will be the State Commissioner of Health. The central authority for the program will be the State Department of Public Welfare. There will, however, be an adequate measure of local responsibility in each county.

While the State is not expected to augment to any considerable extent the present appropriations for public health work, it is understood that the new Social Security Act will set up necessary machinery to permit the State to take advantage of sizeable outright grants to West Virginia by the Federal government for general public health work.

In addition to the physical rehabilitation program, those features of the Social Security Act of unusual interest to the medical profession include pensions for the aged, rehabilitation of the blind, more adequate medical attention for mothers, and increased attention to dependent and crippled children. These are all factors which should tend to decrease the indigency of our citizenship. As indigency is decreased the natural tendency will be to mitigate the pressure of free work requirements which now appears to be morally incumbent upon the medical profession and the hospitals.

TUBERCULOSIS SANATORIA

Physicians who are interested, are urged by Dr. G. Ralph Maxwell, president of the West Virginia Tuberculosis and Health Association, to write to their congressmen and to U. S. Senators Neely and Holt, and also to Harry L. Hopkins, Works Progress Administrator, and explain their difficulties in getting patients admitted to the tuberculosis sanatoria in West Virginia.

An effort is being made to obtain from the WPA appropriation outright grants of $262,000 for Pinecrest and $212,000 for Denmar to increase their bed facilities. At a meeting of the directors of the state and county tuberculosis associations at Charleston, May 15, the executive committee was authorized to send representatives to Washington to press the requests for federal aid as soon as the appropriation is made available by Congress.

HEADQUARTERS TO BE CLOSED

During the Fairmont Convention of the Association, from Monday, June 8, to Thursday, June 11, the headquarters office of the Association in the Public Library Building, Charleston, will remain closed. Physicians desiring to use the Association's library will be admitted by the janitor of the building by presenting their 1936 membership card.

COUNTY SOCIETY NEWS

MARION COUNTY

The regular monthly meeting of the Marion County Medical Society was held at the Fairmont Hotel on the evening of April 28 with Dr. J. B. Clinton, president, presiding. There were 38 members and three visitors in attendance.

The guest speaker of the evening was Dr. W. K. Kalbfleisch of Wheeling who presented a very excellent discussion of röentgenological diagnosis of intestinal obstruction. His comments and lantern slides illustrated the diagnostic findings and were unusually well received. His presentation was ably discussed by Drs. C. M. Ramage, C. L. Parks and W. J. Leahy.

During the business session all of the committees for the coming state meeting reported progress and plans. The transfer of Dr. P. D. Crynock was accepted from the Grant-Hardy-Hampshire-Mineral County Medical Society.

AMOS H. STEVENS, *Secretary*.

BOONE COUNTY

A special meeting of the recently organized Boone County Medical Society was held in the offices of the Boone County Health Department at Madison on the evening of May 13 at which time it was decided to petition the West Virginia State Medical Association for a charter as a component county medical society.

The guest speaker of the evening was Dr. C. F. McClintic, warden of the State penitentiary at Moundsville, who talked on "The Criminal Personality Types in the State Prison." This was a most interesting address and was followed by a round table discussion.

Dr. G. H. Barksdale, Charleston, and Dr. William R. Laird, Montgomery, were the guest speakers at the April meeting of the society. Dr. Barksdale spoke on "Heart Disease", and Dr. Laird on "Appendicitis.." Both papers brought forth a lively and interesting discussion.

R. L. HUNTER, *Secretary*.

CABELL COUNTY

Dr. Hugh G. Beatty, Professor of Otolaryngology at the Ohio State University School of Medicine, was the guest essayist at the May 14 meeting of the Cabell County Medical Society which was held at the Pritchard Hotel, Huntington. His subject was "Harelip and Cleft Palate." There was a fine attendance for this most interesting presentation.

CHAUNCEY B. WRIGHT, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha County Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of May 12 with Dr. Ray Kessel, president, presiding. There was a good attendance and an excellent scientific program.

The speakers were Dr. A. P. Hudgins who read a paper on "The Sterile Couple," and Dr. H. W. Angell, who gave a case report on "Orbital Abscess." Discussion on Dr. Hudgins' paper was opened by Dr. J. P. Lilly.

P. A. HALEY, II, *Secretary*.

HARRISON COUNTY

The Harrison County Medical Society held its regular monthly meeting on the evening of May 7 at the Stonewall Jackson Hotel, Clarksburg.

The speaker of the evening was Dr. Austin I. Dodson, Professor of Genitourinary Surgery of the Medical College of Virginia, Richmond. His subject was "Relations of Focal Infections to Diseases of the Urinary Tract." Lantern slide illustrations were presented in connection with this most interesting paper.

There was a large attendance and a number of visitors present.

CREED C. GREER, *Secretary*.

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held at the Municipal Building on the evening of March 26. During the business meeting, Dr. J. A. Robinson, Bluefield; Dr. Thomas P. Pope, Springton, and Dr. W. H. Malinoski, McComas, were elected to membership.

Following this Dr. Harry G. Steele, Bluefield, gave a talk on the subject, "Gleanings from a Pilgrimage to Philadelphia Obstetrical and Gynecological Clinics." He also gave a very vivid account of his own experience in the recent Pittsburgh flood.

CHARLES T. ST. CLAIR, JR., *Secretary*.

McDOWELL COUNTY

The regular meeting of the McDowell County Medical Society was held on the evening of May 13 in the Appalachian Electric Power building in

Welch. In the absence of the president and vice president, Dr. J. Howard Anderson presided and called the meeting to order.

The first paper of the evening was presented by Dr. Wade H. St. Clair, Bluefield, on "Intraperitoneal Emergencies." This was followed with a paper entitled "Tumors of Bone," presented by Dr. D. L. Hosmer of Bluefield. Both of these papers were very much enjoyed by all present and were liberally discussed.

R. H. EDWARDS, *Secretary*.

MONONGALIA COUNTY

Dr. W. S. Fulton of Wheeling was the guest speaker at the May 5 meeting of the Monongalia County Medical Society which was held at the Hotel Morgan, Morgantown. Dinner was served at six o'clock to the members and guests, following which Dr. Fulton gave a most interesting and entertaining travel talk, illustrated with moving pictures. This was greatly enjoyed by the society.

G. R. MAXWELL, *Secretary*.

PRESTON COUNTY

Dr. A. V. Cadden, superintendent of the Hopemont Sanitarium, was elected president of the Preston County Medical Society at the April 28 meeting, succeeding Dr. Charles E. Smith of Terra Alta, who served during the past fiscal year. Dr. D. J. Rudasill, Kingwood, was elected vice president, and Dr. C. Y. Moser, Kingwood, was elected secretary-treasurer.

Dr. R. D. Harman and Dr. C. Y. Moser, both of Kingwood, were elected as delegates to the state meeting at Fairmont, with Dr. Rudasill and Dr. H. N. Moser of Kingwood as alternates. Dr. S. W. Jabaut was elected on the Board of Censors.

C. Y. MOSER, *Secretary*.

PARKERSBURG ACADEMY

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at the Camden-Clark Hospital on the evening of May 7 and was called to order by the president, Dr. H. H. Veon. During the business session, the society took cognizance of the improvement in the method of admitting patients to the Hopemont Tuberculosis Sanitarium upon the recommendation of the attending physician, and adopted a resolution favoring strict regulation and enforcement of adequate laws governing the Parkersburg milk supply.

The guest speaker of the evening was Dr. A. S. Jones, Huntington, who discussed crippled children's work in West Virginia. The session closed following the presentation of two interesting clinical cases by Dr. H. D. Price, one of unusual congenital lues and one of endocrinopathy in a five-year old negro boy, whose twin sister was presented for comparison. Each case created lively interest and discussion.

There were 27 members and six visitors in attendance.

BERLIN B. NICHOLSON, *Secretary*.

RALEIGH COUNTY

The regular April meeting of the Raleigh County Medical Society was held at the Beckley Hotel, Beckley, on the evening of April 21. The guest speaker of the evening was Dr. Randolph Anderson, Charleston, who presented a paper on "The Treatment of Arthritis," which brought out a liberal discussion.

The May meeting of the Society was held at the Beckley Hotel on the evening of May 21 with Mr. Clarence Meadows, Beckley attorney, and Dr. I. I. Hirschman, Huntington, as the speakers. Mr. Meadows read a paper on "The Doctor on the Witness Stand." Dr. Hirschman spoke on the subject "Peripheral Arterial Disease."

Both of the above meetings were preceded by a dinner served to the members and visitors in attendance.

L. M. HALLORAN, *Secretary*.

OHIO COUNTY

The fourteenth regular scientific meeting of the Ohio County Medical Society was held at the Ohio Valley General Hospital on the evening of April 17. In the absence of the president, the meeting was called to order by Dr. W. M. Sheppe, secretary.

The speaker of the evening was Dr. James C. Flippen, Dean of the Medical Department of the University of Virginia. Dr. Flippin described a relatively new type of meningeal involvement to which he gave the name, "Acute Asceptic Meningitis." This disease of the central nervous system is characterized by stupor, severe headache, increased spinal fluid pressure, increased cell count and increased globulin. It is apparently self-limited as all cases reported have recovered. The symptoms are much alleviated by repeated lumbar puncture. No etiology has been found and it is believed to be due to a filterable virus. Discussion of this interesting paper was presented by Dr. D. A. MacGregor, Dr.

Andrew Wilson, Dr. J. T. Thornton and Dr. W. M. Sheppe, Wheeling, and Dr. A. H. Stevens, Fairmont.

The fifteenth scientific meeting of the society was held on the evening of May 1, with the president, Dr. R. C. Bond, presiding. Resolutions were adopted in memory of Dr. J. J. Osburg, deceased. Delegates elected to the state meeting at Fairmont were Drs. W. C. D. McCuskey, Russell Bailey, Robert Armbrecht and A. L. Jones. Alternates were Drs. H. T. Phillips, J. T. Thornton, Thomas Hoge and C. E. Clovis.

The scientific program was presented by Dr. Max Peet of the Department of Neurosurgery, University of Michigan. Dr. Peet discussed the surgery of the sympathetic system in general with particular attention to the surgical treatment of hypertension. He outlined the indications and contraindications for this type of surgery. An analysis of the results obtained in this group of cases was most interesting. The paper was extremely stimulating and was much enjoyed. Discussion was presented by Drs. D. A. MacGregor, R. J. Snyder and J. T. Thornton.

There were 57 members and a number of guests in attendance.

W. M. SHEPPE, *Secretary.*

NATIONAL T. B. MEETING

Dr. Anthony V. Cadden, superintendent, and Dr. David Salkin of the staff of Hopemont Sanitarium, Terra Alta, appeared on the scientific program of the annual meeting of the National Tuberculosis Association held in New Orleans on April 22-27, 1936. They presented a joint paper on "Non-Communicating Pulmonary Cavity." Dr. Salkin discussed the anatomical and x-ray phases and Dr. Cadden gave the clinical side of the paper, which attracted much interest and attention.

GOLDEN CLINIC DAY

The Annual Clinic Day of the Golden Tumor Clinic of the Davis Memorial Hospital, Elkins, is to be held this year on July 16, 1936, according to a recent announcement of Dr. B. I. Golden, superintendent. The morning session will be given over to work and demonstrations by the Clinic staff and the afternoon will be devoted to lectures.

Essayists on the afternoon program will include Dr. Moses Paulson of the Johns-Hopkins Hospital staff, Baltimore, on "Gastrointestinal Disorders"; Dr. Lloyd Craver, internist to Memorial Hospital, New York City, and Dr. Albert E. Goldstein of Baltimore on "Clinical Manifestations of the Genito-urinary Tract."

The session will close with an evening banquet with Dr. R. J. Wilkinson, Huntington, as toastmaster. The guest speaker will be Dr. Frank Adair, chief surgeon to Memorial Hospital, New York, whose subject will be "Breast Tumors."

The medical profession of the State is invited to attend.

OBITUARY

DR. RUSSELL F. HUFFORD

Dr. Russell Felts Hufford, 28 years of age, died of pneumonia at a Welch hospital on May 19. He was a native of McDowell county, but had been practicing at Tip Top, Virginia, for the past four months. He was a member of the McDowell County Medical Society and the West Virginia State Medical Association.

Dr. Hufford was born at Welch on October 8, 1907 and received his preliminary education there. Later he attended Marshall College at Huntington and the School of Medicine at West Virginia University. In 1932 he graduated from the Medical College of Virginia at Richmond and served his internship for the next year at St. Joseph's Hospital, Parkersburg. He was later a resident at the Memorial Hospital, Norfolk, Virginia.

Dr. Hufford is survived by his parents, his wife, and one sister. Although he had been in private practice but a short time, he had a host of warm friends both within and outside the medical profession.

INTESTINAL BACILLI

Throughout the entire lifetime there is only one day in which the alimentary canal is sterile; that is, free from germs. This is the day of birth, declares Dr. Herbert L. Herschensohn in "The Intestinal Flora," the third in a series on "The Germs We Live With," appearing in the June *Hygeia.*

The first bit of food that is taken carries the tiny colony, which within twenty-four hours develops into a nation of germs greater in number than the people who inherit the earth.

As soon as the food leaves the stomach and enters the duodenum, the first part of the intestine, the germs find little oxygen. From there on, the only germs that can thrive are those which can get along without the oxygen. As the contents of the intestine journey onward they carry along with them the bacteria from the higher levels.

CONVENTION PROGRAM

Official Call

To the Officers and Members of the West Virginia State Medical Association

The sixty-ninth annual session of the West Virginia State Medical Association will be held in Fairmont, West Virginia, from Monday, June the eighth, to Wednesday, June tenth, Nineteen hundred and thirty-six

The House of Delegates will convene on Monday evening, June the eighth, for the transaction of routine business and again on Tuesday evening, June the ninth for election of officers

The Council will meet on Monday afternoon June the eighth, at 2:30 o'clock

The various sections of the Scientific Assembly will meet on Monday, June the eighth

The Scientific Assembly of the Association will open with the General Meeting on Tuesday morning, June the ninth, at 9:30 A. M.

Attest:
Joe W. Sadage,
Executive Secretary

Charles G. Morgan
President

WEST VIRGINIA HEART ASSOCIATION

(In Cooperation with Section on Internal Medicine)

Bavarian Room, Fairmont Hotel

9:30 O'clock, June 8, 1936

President, Dr. Walter C. Swann, Huntington

Secretary, Dr. R. J. Condry, Elkins.

"Certain Aspects of Auricular Fibrillation."

Dr. G. H. Barksdale, Charleston.

"Differentiation and Treatment of the Individual Forms of Circulatory Failure."

Dr. Arthur M. Fishberg, New York.

"The Mechanism and Electrocardiographic Registration of the Heart Beat in Health and Disease." (Illustrated with Motion Pictures).

Dr. Oscar Biern, Huntington.

(Business Meeting and Election of Officers will follow Scientific Meeting.)

SECTION ON SURGERY

Ballroom, Fairmont Hotel

9:30 O'clock, June 8, 1936

Chairman, Dr. T. L. Harris, Parkersburg
Secretary, Dr. R. H. Edwards, Welch.

"Some Factors in Diagnosis of Carcinoma of Stomach"

Dr. John E. Cannaday, Charleston.

Discussion:

Dr. R. J. Wilkinson, Huntington.

"The Hepatic Factor in Surgical Mortality."

Dr. W. S. Fulton, Wheeling.

Discussion:

Dr. Ward Wylie, Mullens.

"The Modern Developments in the Management of Carcinoma of Colon and Rectum."

Dr. Frank Lahey, Boston, Massachusetts.

Discussion:

Dr. B. H. Swint, Charleston.

"Fractures of the Elbow."

Dr. Randolph L. Anderson, Charleston.

Discussion:

Dr. C. W. Stallard, Montgomery.

(Election of Officers)

SECTION ON PEDIATRICS

Mezzanine Parlor, Fairmont Hotel

9:30 O'clock, June 8, 1936

Chairman, Dr. John T. Thornton, Wheeling.
Secretary, Dr. Claude L. Holland, Fairmont.

"Diabetes Mellitus in Infancy with Presentation of a Case."

Dr. C. L. Holland and Dr. E. A. Holland, Fairmont.

"The Educational Value of a Health Examination."

Dr. George M. Lyon, Huntington.

"X-ray Therapy in Bronchitis."

Dr. C. H. Clovis and Dr. R. C. Bond, Wheeling.

"Poliomyelitis."

Dr. L. T. Royster, University of Virginia.

(Election of Officers)

SECTION ON INTERNAL MEDICINE

Ballroom, Fairmont Hotel

2 O'clock, June 8, 1936

Chairman, Dr. John W. Moore, Charleston
Secretary, Dr. G. R. Maxwell, Morgantown.

"A Plea for Early Diagnosis of Pernicious Anemia."

Dr. S. L. Cherry, Clarksburg.

Discussion:

Dr. C. W. Waddell, Fairmont.

"Impairment of Kidney Function and Extrarenal Azotemia."

Dr. Arthur M. Fishberg, New York.

Open Discussion:

"Anemia, Classification and Treatment."

Dr. P. A. Tuckwiller, Charleston.

Discussion:

Dr. J. I. Markell, Princeton.
Dr. D. C. Ashton, Beckley.

"Attempted Means of Preventing Coronary Thrombosis."

Dr. Walter C. Swann, Huntington.

Discussion:

Dr. W. C. Stewart, Charleston.

(Election of Officers)

EYE, EAR, NOSE & THROAT SECTION

Bavarian Room, Fairmont Hotel

2 O'clock, June 8, 1936

Chairman, Dr. F. O. Marple, Huntington.
Secretary, Dr. James E. Blaydes, Bluefield.

"The Prevention of Acute Surgical Mastoiditis."

Dr. Welch England.

Discussion:

Dr. F. T. Scanlon, Morgantown.

"Paranasal Sinusitis, Personal Observations of Author."

Dr. J. Hallock Moore, Huntington.

Discussion:

Dr. S. S. Hall, Fairmont.

"Some Severe Complications of Paranasal Sinusitis."

Dr. Thomas R. Hoge, Wheeling.

Discussion:

Dr. V. T. Churchman, Jr., Charleston.

"Some Legal Aspects of Optical Dispensing."

Dr. Russell S. Wolfe, Elkins.

Discussion:

Dr. J. K. Stewart, Wheeling.

(Election of Officers)

GENERAL CONVENTION PROGRAM

Ballroom, Fairmont Hotel

Tuesday Morning, June 9, 1936

CALL TO ORDER

Dr. Charles G. Morgan, President, Moundsville.

INVOCATION—Reverend George E. Bevans, Pastor, First Presbyterian Church, Fairmont.

ADDRESS OF WELCOME

Dr. J. B. Clinton, President, Marion County Medical Society, Fairmont.

RESPONSE—Dr. G. G. Irwin, Charleston.

SCIENTIFIC PROGRAM

"Rheumatic Heart Disease in Children."

Dr. Lawrence Royster, University of Virginia.

"What constitutes rheumatism. The incidence of rheumatism. Every case of rheumatism potentially is a case of carditis. Importance of early recognition and intelligent care."

Discussion:

Dr. C. L. Holland, Fairmont.
Dr. W. D. Hereford, Huntington.

"The Diagnosis and Treatment of the Traumatic Sacro-iliac Syndrome."

Dr. Claude B. Smith, Charleston.

"Discussion of differential diagnosis and a report of a series of cases treated by beef bone screw (Royle's) fixation—with lantern slides."

Discussion:

Dr. H. A. Swart, Charleston.
Dr. Athey R. Lutz, Huntington.

"Gallstones and Ulcers."

Dr. Frank Lahey, Boston, Mass.

Discussion:

Dr. T. L. Harris, Parkersburg.
Dr. Walter Swann, Huntington.

TUESDAY AFTERNOON, JUNE 9, 1936

"Coronary Thrombosis."

Dr. Arthur M. Fishberg, New York City.

"Present conception of angina pectoris—location of infarcts of the heart—underlying basis and evaluation of symptoms of coronary thrombosis—circulatory dynamics of coronary thrombosis—treatment of coronary thrombosis and its sequelae."

Discussion:

Dr. R. O. Rogers, Bluefield.
Dr. H. L. Robertson, Charleston.

"Status of the Allergic Nose in Sinusitis, Hay Fever and Asthma."

Dr. J. Homer McCready, Pittsburgh, Pa.

"Nasal manifestations of allergy simulating other non-allergic rhinological diseases. The role of allergy in sinusitis. Conservative versus radical treatment of asthma."

Discussion:

Dr. George Traugh, Fairmont.
Dr. W. C. Thomas, Huntington.

ORATION ON MEDICINE

"The Diagnostic Value of Intradermal Injections."

Dr. F. C. Hodges, Huntington.

"In certain diseases, intradermal injections often prove of great diagnostic, and sometimes of prognostic value. Their worth in estimating sensitivity before the injection of serum is also discussed. The large and as yet hazy field of allergy is not included. Some newer tests, the values of which are not yet established, are briefly discussed."

Tuesday Afternoon, June 9, 1936

4:30 to 5:30 P. M.

MONUMENT DEDICATION EXERCISES

Dedication of Founder's Monument at Rivesville, West Virginia.

Dr. T. M. Hood, Clarksburg, Chairman.

Presentation of Monument to Association—Dr. Hood.

Acceptance.....Dr. C. G. Morgan, President

Introduction of Monument Committee—

Dr. C. H. Maxwell, Morgantown.

Dr. Robert J. Reed, Sr., Wheeling.

Dr. C. O. Henry, Fairmont.

Introduction of Mrs. S. M. Prunty, President, Woman's Auxiliary.

Introduction of Founders' Essay Contest Winner

Founders' Address..Dr. R. H. Walker, Charleston

TUESDAY EVENING, JUNE 9, 1936

Ballroom, Fairmont Hotel
Eight O'clock

PRESIDENT'S ANNUAL ADDRESS

"Some Difficult Medical Problems."

Charles G. Morgan, M. D., President, West Virginia State Medical Association.

NOTE: The House of Delegates will convene immediately following the Presidential Address for the purpose of electing officers for the ensuing year.

WEDNESDAY MORNING, JUNE 10, 1936

Ballroom, Fairmont Hotel
9:30 O'clock

"Abdominal Pain."

Dr. M. H. Porterfield, Martinsburg.

"A resume of a general discussion of abdominal pain and some of the diseases of which abdominal pain is the most prominent symptom."

Discussion:

Dr. H. E. Sloan, Clarksburg.
Dr. C. B. Peck, Grafton.

"The Old Man and His Prostate."

Dr. George Livermore, Memphis, Tennessee.

"Prostatitis—Disease of young men. Hypertrophy—Disease of old men. Treatment entirely different. Cause of hypertrophy unknown, but occurs only in men past 50. Prostatic resection—operation of choice. New procedure offered for poor risks and those who refuse any operations. (Lantern slides).

Discussion:

Dr. A. L. Jones, Wheeling.
Dr. B. B. Nicholson, Parkersburg.

"Congestive Failure."

Dr. R. H. Wharton, Parkersburg.

"A discussion of the aspects of congestive failure with special attention given to its early manifestations."

Discussion:

Dr. I. I. Hirschman, Huntington.
Dr. H. R. Sauder, Wheeling.

"Newer Methods in the Diagnosis and Treatment of Food Allergy."

Dr. Warren T. Vaughan, Richmond, Virginia.

"The skin test has a certain amount of reliability but it is not as reliable with foods as it is with inhalant allergens. More satisfactory results are obtained when the leucopenic index and the food diary are used in conjunction with skin testing. The importance of an understanding of the biologic relationship of different foods is also discussed."

Discussion:

Dr. R. C. Hood, Clarksburg.
Dr. Roger Clapham, Martinsburg.

WEDNESDAY AFTERNOON

Ballroom, Fairmont Hotel
2 O'clock

ORATION ON SURGERY

"Thoracic Surgery."

Dr. Russell B. Bailey, Wheeling.

"A review of the progress of the last ten years, dealing chiefly with the management of suppurative lesions and new growths in the thoracic viscera."

"Breech Presentations."

Dr. George Alvin Ulrich, Philadelphia, Pa.

"Presenting a series of several hundred cases during the past six years at the Philadelphia Lying-In Hospital and the Jefferson Maternity, Philadelphia. The author takes up the incidence, cause, diagnosis and prognosis, and lays special stress upon the treatment of breech presentation. In the series of cases he also takes up the relation of breech presentation to twin pregnancy and other unusual conditions. (Lantern slides).

Discussion:

Dr. James R. Bloss, Huntington.
Dr. A. Morgan Dearman, Parkersburg.

"Drug Eruptions."

Dr. Howard T. Phillips, Wheeling.

"Ingestion of certain drugs is sometimes followed by cutaneous lesions bizzare in appearance and baffling as to diagnosis. This paper attempts to briefly summarize some of the more characteristic lesions and the drug causing them. A few case histories are presented with lantern slides to demonstrate."

Discussion:

Dr. W. Beckett Martin, Huntington.
Dr. M. L. Bonar, Charleston.

ANNUAL CONVENTION BANQUET

Ballroom, Fairmont Hotel

WEDNESDAY EVENING, JUNE 10, 1936
7 O'clock

Toastmaster.....Dr. Albert H. Hoge, Bluefield

Speaker.....Thurman B. Rice, Indianapolis, Ind.

Assistant Director Indiana Health Department.

Subject: "Health Fads."

CONVENTION DANCE
10 P. M. Until Closing.

WEST VIRGINIA SOCIETY
INDUSTRIAL PHYSICIANS & SURGEONS

Ball Room—Fairmont Hotel

Thursday, June 11, 1936

10 o'clock A. M.

President—Dr. George Fordham, Powellton

Vice President—Dr. Philip Prioleau, Fairmont

Secretary—Dr. E. Bennette Henson, Charleston

"Fractures of the Neck of the Femur."

Dr. Charles L. Scudder, Boston, Massachusetts.
(Moving Pictures).

Open Discussion.

"Educating the Public in First Aid Care of Fractures." (Informal).

Dr. Charles L. Scudder, Boston, Massachusetts.

Election of Officers.

Selection of next meeting place.

W. VA. SOCIETY OF OBSTETRICIANS
AND GYNECOLOGISTS

FAIRMONT ELKS' CLUB

Thursday Morning, June 11, 1936

9 o'clock A. M.

Meeting called to order by President Dr. H. G. Steele.

Invocation.

Introduction of members and guests.

9:15 A. M.

President's Address.....*Better Obstetrics*
Dr. Harry G. Steele, Bluefield, W. Va.

9:45 A. M.

Forty Years of Obstetrics.
Dr. C. H. Maxwell, Morgantown, W. Va.

Discussion.

10:15 A. M.

Electro-Coagulation of the Cervix.
Dr. A. Morgan Dearman, Parkersburg, W. Va.

Discussion.

10.45 A. M.

The Perineum During Labor.
Dr. Walter W. Point, Charleston, W. Va.

Discussion.

11:15 A. M.

Placenta Accreta.
Dr. A. P. Hudgins, Charleston, W. Va.

Discussion.

REPORT OF CLINICAL CASES

DINNER AT THE ELKS' CLUB.....12 Noon

BUSINESS SESSION.....1:00 P. M.

THURSDAY AFTERNOON

June 11, 1936

2:00 P. M.

ROUND TABLE ON

MATERNAL MORTALITY

by

Dr. George A. Ulrich, Attending Obstetrician, Jefferson Medical College and Hospital and Philadelphia Lying-In Hospital, Philadelphia, Pa.

ORDER OF BUSINESS

Council.—For the Council sessions, the order of business will be as follows:

Call to order by Council Chairman.

Reports of Standing Committees.

Reports of Special Committees.

Report of Secretary.

Report of District Councillors.

Auditor's Report.

Unfinished business.

New business.

House of Delegates.—For sessions of the House of Delegates the order of business will be as follows:

Call to order by the President.

Roll call.

Reports of Standing Committees.

Reports of Special Committees.

Report of Secretary.

Unfinished business.

New business.

GUESTS OF HONOR

Dr. Lawrence Royster, University of Virginia.

Dr. Frank Lahey, Boston, Massachusetts.

Dr. Homer McCready, Pittsburgh, Pennsylvania.

Dr. George Livermore, Memphis, Tennessee.

Dr. Warren T. Vaughan, Richmond, Virginia.

Dr. George Alvin Ulrich, Philadelphia, Pennsylvania.

Dr. Arthur M. Fishberg, New York City.

Dr. Charles L. Scudder, Boston, Massachusetts.

Dr. Thurman B. Rice, Indianapolis, Indiana.

LOCAL CONVENTION COMMITTEES

General Chairman ..... Dr. Amos H. Stevens

Hotel Reservations .. Drs. H. S. Keister and J. C. Collins

Entertainment ..... Drs. C. M. Ramage, Joe Yost, and D. D. Hamilton.

Golf ..... Drs. S. S. Hall and G. V. Morgan

Shooting ..... Drs. E. P. Smith and Philip Johnson

Parking ..... Drs. J. P. Helmick and J. M. Trach

Publicity ..... Drs. E. D. Wise, J. L. Blanton and Eugene Holland.

Auxiliary ..... Drs. L. R. Lambert, K. Y. Swisher, C. L. Holland.

Monument Committee—Drs. C. O. Henry, T. M. Hood of Clarksburg; Robert Reed, Sr., of Wheeling; H. V. Thomas and E. K. Munn.

WOMAN'S AUXILIARY

General Chairman ..... Mrs. W. A. Welton

Co-Chairman ..... Mrs. Philip Johnson

Registration ..... Mrs. J. Lewis Blanton

Transportation ..... Mrs. George Traugh

Luncheons ..... Mrs. G. H. Brownfield

Program ..... Mrs. J. B. Clinton

Decorations ..... Mrs. Philip Johnson

Publicity ..... Mrs. L. R. Lambert

Inter-County Chairman—Mrs. E. D. Wise, Mrs. H. V. Thomas.

ANNOUNCEMENTS

All general scientific sessions of the Association will be held in the ballroom of the Fairmont Hotel.

There will be a meeting of the Association Council at 2:30 o'clock on Monday afternoon, June 8, at the Fairmont Hotel and thereafter at the call of the chairman.

The House of Delegates will meet for the purpose of transacting business and hearing reports on Monday evening, June 8, in the ballroom of the Fairmont Hotel.

A second meeting of the House of Delegates will be held on the evening of June 9, immediately following the President's Address, for the purpose of electing officers for 1937 and to transact unfinished business from the previous session.

All members of the Association, their wives, and guests are requested to register immediately upon arrival in Fairmont. The registration desk will be on the mezzanine floor of the Fairmont Hotel.

The annual Association Golf Tournament will be in charge of Dr. S. S. Hall and Dr. G. V. Morgan of Fairmont. Members are required to bring their club handicaps certified by their club professionals. Trophies and awards will be presented at the Convention Banquet.

Trap shooters and skeet shooters are requested to bring their guns for the first annual shooting event of the Association. The trap and skeet tournament will be in charge of Dr. E. P. Smith and Dr. Philip Johnson.

The West Virginia Heart Association will meet in the Bavarian Room of the Hotel Fairmont on Monday morning, June 8.

Fellows of the American College of Surgeons will hold a dinner at 6:30 o'clock on Tuesday evening, June 9, at the Fairmont Hotel. All Fellows of the College are urged to attend.

The West Virginia Society of Industrial Physicians and Surgeons will meet in the Fairmont ballroom on the morning of June 11.

The West Virginia Obstetrical and Gynecological Society will meet in the Fairmont Elks' Club on the morning of June 11.

The Section on Surgery will meet in the Fairmont ballroom on the morning of June 8.

The Section on Pediatrics will meet in the Mezzanine Parlor of the Fairmont on the morning of June 8.

The Section on Internal Medicine will meet in the Fairmont ballroom on the afternoon of June 8.

The Eye, Ear, Nose and Throat Section will meet in the Bavarian Room of the Fairmont on the afternoon of June 8.

The annual Convention Banquet and Ball will be held at the Fairmont Hotel on Wednesday evening, June 10.

COMMERCIAL EXHIBITORS

The commercial and other exhibits will be on display throughout the convention on the mezzanine floor of the Fairmont Hotel. Exhibitors who have accepted display invitations include:

Coca Cola Company, Atlanta, Georgia.
Kloman Instrument Company, Charleston.
General Electric X-ray Corporation, Chicago.
Robert A. Fulton Company, Pittsburgh.
Bard-Parker Company, Danbury, Connecticut.
Phillip Morris Cigarettes, New York City.
Mellins Food Company, Boston, Massachusetts.
Mead Johnson Company, Evansville, Indiana.
Lederle Laboratories, Inc., New York City.
A. S. Aloe Company, Saint Louis, Missouri.
American Optical Company, Southbridge, Mass.
Max Wocher and Sons Company, Cincinnati.
Feick Brothers, Inc., Pittsburgh.
H. G. Fischer and Company, Inc., Chicago.
Kelley Koett X-ray Company, Covington, Ky.

PAST PRESIDENTS

Date	*Place of Meeting*	*Name*
1867	Fairmont	W. J. Bates*
1867	Wheeling	John Frissell*
1868	Grafton	John Frissell*
1869	Clarksburg	H. W. Brock*
1870	Parkersburg	J. W. Ramsey*
1871	Martinsburg	W. J. Bland*
1872	Wheeling	J. M. Lazzell*
1873	Parkersburg	R. H. Cummins*
1874	Morgantown	M. S. Hall*
1875	Point Pleasant	M. Campbell*
1876	Wheeling	A. R. Barbee*
1877	Clarksburg	E. A. Hildreth, Sr.*
1878	Weston	J. W. McSherry*
1879	Martinsburg	W. H. Sharp*
1880	Parkersburg	W. M. Dent*
1881	Wheeling	W. F. Van Kirk*
1882	Wheeling	J. E. Reeves*
1883	Grafton	B. W. Allen*
1884	Clarksburg	A. Gerstell*
1885	Weston	George Baird*
1886	Charleston	T. A. Harris*
1887	White Sulphur Springs	S. L. Jepson*
1888	Huntington	L. S. Brock*
1889	White Sulphur Springs	L. D. Wilson*
1890	Wheeling	S. H. Austin*
1891	Fairmont	S. H. Brownfield*
1892	Clarksburg	C. Shriver*
1893	Parkersburg	D. P. Morgan*
1894	Berkeley Springs	R. W. Hazlett*
1895	Davis	D. Mayer*
1896	Wheeling	J. A. Campbell*
1897	Charleston	N. D. Baker*
1898	Martinsburg	C. E. Ulrich*
1899	Weston	J. L. Dickey*
1900	Morgantown	C. S. Hoffman*
1901	Grafton	A. H. Thayer*
1902	Parkersburg	G. A. Aschman*
1903	Charleston	H. B. Stout*
1904	Fairmont	T. L. Barber*
1905	Wheeling	T. M. Hood
1906	Webster Springs	S. S. Wade
1907	Huntington	W. W. Golden*
1908	Clarksburg	F. Howell
1909	Elkins	V. T. Churchman
1910	Parkersburg	T. W. Moore
1911	White Sulphur Springs	C. A. Wingerter
1912	Webster Springs	C. O. Henry
1913	Charleston	F. L. Hupp*
1914	Bluefield	R. E. Vening*
1915	Huntington	H. P. Linsz
1916	Wheeling	A. P. Butt
1917	Fairmont	J. E. Rader*
1918	Martinsburg	Sam Holroyd
1919	Clarksburg	Robt. J. Reed
1920	Parkersburg	H. R. Johnson
1921	Charleston	J. H. Anderson
1922	Huntington	Geo. A. MacQueen*
1923	Beckley	John N. Simpson
1924	Wheeling	R. A. Ashworth
1925	Bluefield	Geo. D. Jeffers
1926	Morgantown	James R. Bloss
1927	White Sulphur Springs	C. R. Ogden
1928	Fairmont	C. A. Ray
1929	Martinsburg	H. M. Hall*
1930	White Sulphur Springs	W. E. Vest
1931	Clarksburg	C. H. Maxwell
1932	Parkersburg	Albert H. Hoge
1933	Charleston	D. A. MacGregor
1934	Huntington	Roy Ben Miller
1935	Wheeling	Rome H. Walker
1936	Fairmont	Charles G. Morgan

* Deceased.

WOMANS' AUXILIARY PROGRAM

President.....Mrs. S. M. Prunty

Recording Secretary.....Mrs. J. H. Robinson

Treasurer.....Mrs. Robt. Reed, Jr.

Auditor.....Read by Recording Secretary

STANDING COMMITTEES: (Five Minutes)

Archives.....Mrs. M. F. Petersen

Exhibits.....Mrs. E. C. Hartman

Historian.....Mrs. S. S. Hall

Hygeia.....Mrs. George Fordham

Legislation.....Mrs. A. D. Knott

Parliamentarian.....Mrs. John Gilmore

Press and Publicity.....Mrs. H. P. Evans

Program.....Mrs. V. E. Holcombe

Public Relations.....Mrs. M. I. Mendeloff

Southern Medical.....Mrs. B. S. Preston

Geo. Washington Foundation..Mrs. O. H. Bobbitt

MONDAY, JUNE 8, 1936

2 o'clock—Red Cross Building

Registration.....Fifty cents

3 o'clock—Red Cross Building

EXECUTIVE BOARD MEETING

Presiding.....Mrs. S. M. Prunty

7 o'clock—Fairmont Field Club

Buffet Supper—Tickets, Registration Desk..$1.00

TUESDAY, JUNE 9, 1936.

9 o'clock—Red Cross Building

FORMAL OPENING OF CONVENTION.

Presiding.....Mrs. S. M. Prunty

Introduction of Mrs. W. A. Welton, General Convention Chairman.

Invocation.....Mrs. C. L. Parks, Fairmont

Address of Welcome.....Mrs. H. V. Thomas, President, Marion County Auxiliary.

Response.....Mrs. F. S. Harkleroad, Harvey, West Virginia.

"In Memoriam".....The Roll Call of Counties.

MINUTES ELEVENTH ANNUAL MEETING.

ROLL CALL.

Report of Committee on Credentials and Registration.....Mrs. J. L. Blanton

RESOLUTIONS.

TUESDAY AFTERNOON, JUNE 9, 1936

1 o'clock—Fairmont Field Club

COMPLIMENTARY LUNCHEON:

Hostesses.....Marion County Auxiliary

Presiding.....Mrs. S. M. Prunty

Greetings—Doctor Charles G. Morgan, President, West Virginia State Medical Association.

Speaker—Doctor R. H. Walker, Past-President, West Virginia State Medical Association.

Guests—Doctors R. B. Miller, R. C. Bond, S. S. Hall, Advisory Board; Mr. Joe W. Savage, Executive Secretary, State Medical Association.

2:30 to 3:30 o'clock

CONFERENCES

Auxiliary Presidents and Presidents-Elect —Mrs. A. H. Stevens

Exhibits.....Mrs. E. C. Hartman

History.....Mrs. S. S. Hall

Hygeia.....Mrs. George Fordham

Press and Publicity.....Mrs. H. P. Evans

Program.....Mrs. V. E. Holcombe

Public Relations.....Mrs. M. I. Mendeloff

Legislation.....Mrs. A. D. Knott

4 o'clock

DEDICATION CEREMONIES

West Virginia State Medical Association.

TUESDAY EVENING, JUNE 9, 1936

8 o'clock

OPEN MEETING

West Virginia State Medical Association.

WEDNESDAY, JUNE 10, 1936

8:30 o'clock

PAST PRESIDENT'S BREAKFAST

Committee...Mrs. B. S. Preston, Mrs. S. S. Hall

10 o'clock—Red Cross Building

Presiding.....Mrs. S. M. Prunty

MINUTES.

Report of Committee on Credentials and Registration.....Mrs. J. L. Blanton

PRESENTATION OF BUDGET:

REPORTS OF COUNTY PRESIDENTS:

Cabell.....Mrs. W. O. Grimm
Fayette.....Mrs. George Fordham
Harrison.....Mrs. E. B. Wright
Kanawha.....Mrs. J. W. Moore
Logan.....Mrs. Harold Van Hoose
Marion.....Mrs. Harry V. Thomas
McDowell.....Mrs. G. L. Straub
Monongalia.....Mrs. E. B. Tucker
Ohio.....Mrs. John Gilmore
Wood.....Mrs. R. H. Wharton

DISCUSSION.

Nominating Committee.

Election of Officers.

Installation of Officers.

Courtesy Resolutions.

Minutes.

WEDNESDAY, JUNE 10, 1936 (*Continued*)

1 o'clock—Methodist Protestant Church

Luncheon—Tickets, Registration Desk..Fifty cents

Presiding.....Mrs. S. M. Prunty

Guest.....Miss Annie Reeves

Speaker.....Mrs. J. Bonar White, First Vice President, Auxiliary to A. M. A.

Presentation of President for 1936-1937—Mrs. A. H. Stevens.

ADJOURNMENT—SINE DIE.

POST CONVENTION BOARD MEETING

(*Time and Place to be Announced*)

Presiding.....Mrs. A. H. Stevens

4 o'clock—Tea—Nurses' Home, Cook Hospital

Hostesses....Women's Association, Cook Hospital

PAST PRESIDENTS

Mrs. A. G. Rutherford.....Bluefield
Mrs. B. S. Preston.....Charleston
Mrs. R. V. Shanklin.....Gary
Mrs. J. P. Lilly.....Morgantown
Mrs. Walter C. Swann.....Huntington
Mrs. S. S. Hall.....Fairmont
Mrs. Howard T. Phillips.....Wheeling
Mrs. Frank V. Langfitt.....Clarksburg
Mrs. M. F. Petersen.....Charleston

ADVISORY BOARD

Dr. R. B. Miller
Dr. R. C. Bond
Dr. S. S. Hall
Mrs. F. V. Langfitt
Mrs. M. F. Petersen

MEDICAL RESERVE APPOINTMENTS

Because of the discontinuance of Medical Department R. O. T. C. units in June, 1935, it is anticipated that the numbers of Medical Reserve Officers will soon run considerably below mobilization requirements.

Any qualified physicians interested in securing appointments in the Medical Reserve Corps should communicate with the headquarters office of the Charleston Military District in the Masonic Temple.

Inactive duty credits not to exceed seven hours per day may be granted Reserve Officers for their work in interesting and securing the applications for commissions from qualified and desirable medical personnel.

BETTER MATERNITY CARE

Plans are rapidly being formulated in West Virginia to promote better maternal care with a view to reducing the large number of maternal deaths. These plans are a part of the maternal and child health section of the Social Security Act. National attention is being directed to the maternal death rate in America and steps taken to decrease the danger of motherhood through proper prenatal and postnatal care.

Fifteen thousand mothers died last year in the United States, 218 of this number in West Virginia, as the result of childbirth. According to figures released by the State Health Department, more than 1,025 mothers have died in West Virginia during the past five years. The majority of these deaths are unnecessary, according to health authorities, and had the mothers been given proper care from the beginning of pregnancy many lives would have been saved.

There has been a slight decrease in the maternal deaths in recent years, which shows that the nationwide work for better maternal care is beginning to show some results. A great majority of mothers still have little or no prenatal care, calling the doctor only when it is time for the child to be born. Many women in West Virginia have no attending physician and when complications arise the midwife or the attendant is not able to handle the case. This is one of the greatest causes of infant and maternal deaths.

The keynote of the national campaign this year is "Early and Adequate Care Reduces the Risks of Motherhood." Six simple facts which hold the key to the reduction of maternal fatalities as given by prominent obstetricians include a complete medical examination in the beginning of pregnancy; regular and frequent examinations; examination of the mother at six weeks, three months, six months and a year after birth of child, and continued examination of the baby.

The State Health Department carries on a Motherhood Correspondence course as a supplement to the doctors care. This consists of prenatal letters, booklets on prenatal care, weight charts and diet cards and several other pertinent booklets, which are mailed at regular intervals to the expectant mother for her information. It further aids to impress on the mother the great need for adequate early care and to guide her in this care. Any doctor may enroll his patients by writing direct to the division of child hygiene of the State Health Department.

A CHILD'S LIE

Perhaps if parents understand why a child lies they can help him steer clear of that degrading habit without resorting to spankings, affirms Richard Fechheimer in the June *Hygeia*.

Children should be taught that our civilization is built on the mutual respect and confidence that can be bred between people only by honest dealings. Children should know that truth is a vital essential in decent living and that a liar can never gain the respect of his fellow men.

The world populated by story book and radio characters and by funny page people is often as real as the other world which adults call "reality." Distinguishing imperfectly between objective reality and fantasy the child will lend the most vivid interpretation to any stimulus, and the result may be a lie. But is indiscriminate punishment the way out?

The most general reason for children's lies is fear, usually fear of punishment. Deception is an ancient means of self-defense. When the child does not feel secure, when he does not understand why he is being punished, or when seemingly unreasonable restraints are placed on his behavior, only then does his world appear to be hostile and deception the proper defense.

A parent should blame himself first for his child's lies. A child will have little use for lies if he has confidence that his parents will give him understanding assistance in his efforts to adjust himself to an adult world.

THE WEST VIRGINIA MEDICAL JOURNAL

PUBLIC LIBRARY BUILDING, CHARLESTON, W. VA.

The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII JULY, 1936 No. 7

SOME DIFFICULT MEDICAL PROBLEMS*

By C. G. Morgan, M. D.
President, West Virginia State Medical Association
Moundsville, W. Va.

"The time is out of joint; oh cursed spite that I was ever born to set it right."

Thus some hundreds of years ago did Shakespeare very ably express my opinion of the situation that is facing us of the medical profession today. There are many problems confronting our profession that affect each and every one of us most vitally; problems with which we must grapple and solve, if we expect to see the continuation of medical practice as we have known it in the past. Some of my remarks may sound, at first, like a criticism of the trend of the times, but they are not intended as political propaganda nor as a criticism of any political party. We shall examine these problems, seeking ways and means of furthering the best interest of the medical profession, and what is of much more vital importance, the best interest of all the people.

This is a period of unrest and change. There is a great desire to try something new in the hope that conditions may be improved. I boldly predict that there will be many ill-considered socialistic and communistic bills brought before the next regular session of our State legislature, seeking to govern and control the practice of medicine within the State. Most of the men introducing these bills will not have the slightest idea of the subject about which they will be seeking legislation, but that will not deter them in the least. Therefore, it behooves each and every member of our profession to study carefully the various schemes of socialized or state medicine, whether through insurance groups which may be either voluntary or involuntary, or whether by direct state control of medicine. Perhaps, in the future, some other system of medical practice may be evolved. Possibly we should do better to make some modification of our present system, but we

*Read before the West Virginia State Medical Association at the 69th Annual Meeting, Fairmont, on June 9, 1936.

should not *blunder* into something new nor be placed in a position where we must change our existing system on short notice. We must make changes only after painstaking study and mature deliberation have revealed their practicability. The whole matter must be worked out and planned to the most minute detail. That pungent couplet from Pope's "Essay on Criticism" is as sound advice today as the day it was written, "Be not the first by whom the new is tried nor yet the last to lay the old aside."

At our meeting last December the Council of our Association made provision for a committee of three, the duty of which was to be the study of the various insurance plans through which medical practice might be conducted and also the various phases of socialized or state medicine. I do not know what the final conclusions of this committee will be. I do not want by word or action to influence their conclusions. It is their job to gather the data and reach their own conclusions unhampered by any one. When their work is finished it will be the duty of this Association to help them evaluate their findings. But of this one thing I am sure, there is no group of three men in our state, within or without the ranks of organized medicine, better qualified for this delicate mission than the chairman, Dr. W. R. Hughey, and the two members of this committee, Dr. G. A. Smith and Dr. R. H. Wharton. Their judgment in these matters should and doubtless will, carry great weight with our Association. But what of the other thousand or more members of our body? Can they stand idly by while these three man wrestle with these problems as Jacob wrestled with the Angel? No! It is the duty of each and every one of us to leave no stone unturned in our effort to gather all the facts and information on this very pertinent subject. Whatever our conclusions may be, the one thing of which we must never lose sight is that medical practice must be kept within the medical profession, and under its direction and guidance, and must not be permitted to fall into the hands of, or be guided by socialized workers, theorists, and crack-pots with the ever increasing bureaucracy that would inevitably be spawned and with the consequent regimentation of the physicians and the people when these physicians have ever served with satisfaction.

The social worker I accept in the sphere where they are fitted to serve, and in that sphere they perform a service which the changing complexities of the time demand. The half-baked theorists and the crack-pots may have their use, but God alone knows what that use may be. Speaking now as an individual member of the medical profession, and not attempting to speak for our Association, the system we now have which has successfully withstood the test of time, is good enough. Aye, far better than any of the plans which theorists would have us institute in its stead. Any system of medical practice which would introduce a third person or persons between the patient and his physician can never succeed in giving this patient the best medical service. While it is true that medicine is a science, it is also an art, and as an artist, the physician will never be able to do his best work if it is planned and directed by others.

No man, or group of men is greater than the medical profession as a whole. No man, or group of men must be permitted to further selfish interests to the detriment of our common good. We must stand together, shoulder to shoulder, solidly arrayed against all enemies of our profession either within or without our ranks. The organized medical profession of our state can not seek the good of our own members and give no thought to the physicians who are not within our ranks. We must consider the whole medical profession and what is best for the profession as a whole. We must have some very definite program which will be of service to these men who are not members of our Association, if we ever expect them to join us or to follow any plan we may devise, or to even work in harmony with us in anything which we may in the future undertake for the good of the

medical profession. To ignore these men without our ranks would be as unwise and as unjudicious as for a Christian denomination in time of a great calamity, such as the recent devastating flood in the Ohio Valley to refuse aid and comfort to the people who are not enrolled on the rosters of the churches of their own denomination. Nay, rather should we be like the American Legion which looks after the interest of the Legionnaire and nonmembers alike. It is sufficient that he is an ex-service man and needs help. This organization has grown strong and great and rightly deserves the high esteem in which it is held by ex-service men.

Some time ago I had a communication from Dr. K. M. Jarrell of the Pinecrest Sanitorium, which, as most of you know, is the State Tubercular Sanitorium, located in and serving chiefly the southern part of West Virginia. He stated that they had a waiting list on file at this institution of nearly three hundred patients, and I understand that the same condition exists at the West Virginia Sanitorium at Hopemont. This is indeed, a sad and deplorable condition. If an application for entrance were to be filed today at Pinecrest Sanitorium, it would be months before the patient could be admitted. Consequently the cases that are on file now, which at the present time are incipient, or at least early cases of tuberculosis, will have become moderately or well advanced cases before they can hope to be admitted. Their chance for a permanent cure or even an arrest of their malady will have become remote. Worse yet, when these cases finally are admitted they are so far along in the course of their disease and are in such physical condition that they must be kept at the institution for years or until death closes the case. Thus, they will be taking up valuable space over a long period of time that could be utilized to care for early and curable cases, and while they are awaiting admittance, there will be around three hundred foci of tuberculosis scattered about West Virginia to disseminate this disease and infect others, and these others who contract tuberculosis from these waiting cases will, in turn, become foci of infection to pass the disease on adinfinitum. Unless something can be done and that soon, to adequately hospitalize the tuberculous cases of our State, we shall reap the whirlwind in the years to come. I have asked Dr. Jarrell and others of the personnel of the Pinecrest Sanitorium, to appear before this meeting of our association and to explain this deplorable condition to our members. No doubt there are many as ignorant of this sad condition as I was before receiving Dr. Jarrell's communication. Someone has proposed that one of the miner's hospitals which belongs to our State be converted into a tuberculosis sanitorium. Certainly these miners' hospitals are not needed by the State to care for injured miners at the present time, if they ever were needed. There is adequate hospital space to take care of the miners in southern West Virginia. For the most part, these are private hospitals, but they are doing excellent work. As the matter now stands, our State miners' hospitals are openly competing with private hospitals for patients, to the great detriment of these private hospitals. I can see no valid excuse for these State hospitals continuing as miners' hospitals in the State of West Virginia.

Provisions were made at our last annual meeting in Wheeling for a committee on Maternal and Child Welfare. These committees, formed at that time with the personnel named, have been functioning in a very excellent manner. They have met with fine coöperation from Dr. McClue, head of the State Department of Health and the entire State Health Department. These committees and the State Health Department have been working harmoniously and I should like to pause here and pay a tribute to Dr. McClue, to Dr. Blake, and the entire State Health Department, for their fine attitude toward the organized medical profession of West Virginia. Our State is indeed fortunate to have such men in the Health Department. They have a large responsibility in caring for the health of our State, and are

doing excellent work in discharging this responsibility. I hope, sincerely, that these men will continue in the work that they are now doing so well.

The work of the maternal and child welfare organization is very important today and must be controlled and guided by our profession. These particular welfare organizations, appealing so strongly to the good that is innate in the heart of humanity, are the stalking horses which socialized medicine seek eagerly to use to enter and take possession of our profession. Like the ancient Greeks, who after battling for ten years about the city of Troy and after being unable to take the city, built a large wooden horse outside the city walls and retired as if they had given up hope of being able to make the conquest. Their enemies gone, the Trojans poured forth from the gates of the city, and seeing this wooden horse, carried it within the city, thinking it was some sort of religious offering left by the Greeks. Hidden within this wooden horse were a number of the best and bravest warriors of the Grecian army who stole forth from the horse at night while the Trojans slept, unlocked the city gates, and the great hordes of Greeks rushed in, captured and sacked the city, slew many of the populace and carried the others into captivity.

The medical profession can learn two lessons from the story of the capture of Troy. First, we can not afford to be lulled into a feeling of security. Second, we must scrutinize closely any plans which may be offered for the salvation of the medical profession, especially if these plans are offered by people or organizations outside our profession who do not know our problems.

Last year at our convention at Wheeling, these two committees, the one to direct the study of maternal welfare and the other to direct the study of child welfare were formed. Dr. James R. Bloss was named general chairman of the maternal welfare committee, with Dr. Andrew E. Amick as general chairman of the child welfare committee. You chose well in naming your general chairman, as well as in choosing the sub-chairmen for each organization in the six congressional districts. They have done good work and have made splendid progress. They are bringing some semblance of order out of the chaotic conditions that existed in these fields.

Our State ranks low in the welfare work in comparison to other states. The loss of life of expectant mothers has been appalling, due to very meager or no prenatal care, with unclean and unsanitary surroundings at the time of birth and during the period of lying in, with perhaps some ignorant midwife, whose hands literally reek with virulent bacteria, in attendance. The wonder has been not that so many have died, but rather that so many have survived. In child welfare we have been in no better repute. Thousands of our children have perished, and thousands more have been doomed to a life that is perhaps worse than death, a burden to their families and the community in which they live, and much of which could have been avoided, had the mothers had good prenatal care, good care at the birth of the child and during the postnatal period, and had the child have had proper medical supervision during the first few years of its existence. For the expectant mother, the minimum program we can adopt will provide for prenatal care, including several visits to her physician for examination, advice, and guidance; a good clean, sterile delivery, whether in the home or hospital, and proper postnatal care until the danger of infection is past.

For the child, supervision from the day of birth until the child is several years of age with proper care in feeding and nutrition, immunization against infectious diseases, supervision of its clothing, play, and work in school.

It is the duty and the privilege of our Association to guide these committees on maternal and child welfare, lest they get out of hand and become political footballs to the great detriment of the people they are intended to serve. Members of our own organization who seek personal publicity and self-aggrandizement to the detriment of this work,

and at the expense of the medical profession must be disciplined, and if need be, driven from the ranks of organized medicine.

Any welfare program to be of lasting benefit must include our State Association, the State Health Department, the county medical society, and the various community lay organizations coördinating for one common cause. Our State organization and the State Health Department can not do this work alone, but must have the active assistance of the county medical society and the various lay organizations in the community served. This has been ultimately proven by the various forms of relief undertaken by our government and directed from Washington. Each community must be made to assume a very definite part in the responsibility and the cost of the service rendered that community.

Maternal and child welfare are very timely subjects and must either be met and solved by the medical profession or they will be taken out of our control and placed in the hands of social service organizations which have neither the knowledge, nor the ability to carry these worthy causes to successful fruition.

Today there is the call to leadership in our organization. We must answer promptly and act wisely or we shall relinquish our chance to be of inestimable benefit to humanity. Not only will we lose the esteem of our people, but also the people will lose the leadership which our organization alone can give.

These committees on maternal and child welfare are compiling data preliminary to the adoption of a definite plan of action. When this data is available and when our doctors are made conversant with the duties required of them, then they must either assume these duties and responsibilities, or the medical profession must push on without them. With the complete functioning of the maternal welfare work, we can save the useless sacrifice of our mothers, and no greater calamity can befall a family than the death of the mother of little children.

When the child welfare is functioning as it should, it will mean the entire eradication of such communicable diseases as diphtheria, tuberculosis, and scarlet fever. Infant mortality and morbidity will be tremendously lowered and the vast sum of money now being expended for the treatment and control of these diseases can be diverted to the purpose of furnishing food and clothing for the poor. Christ said, "The poor ye have with ye always." Aye, the grain is ripe for the sickle. Lord of Harvest, send forth reapers.

The medical profession for some time has been under the ominous cloud of socialized or state medicine, with all the regimentation of our physicians and our people that socialized or state medicine would entail. Should socialized or state medicine come, it will mean in this country as it has meant in every country where it has been tried—a much lower grade of medical service than we now enjoy, with a horde of bureaucratic spawned clerks and officials. The additional cost of this bureaucracy which we now neither have nor need must either be paid for out of money that now goes for medical service or by money derived from additional taxation, or more likely, from both sources.

To avert the calamity of state medicine, we must put our own house in order. This will require work and sacrifice on the part of each individual of the medical profession for the common good of the entire profession. Bickering and fighting within our profession must cease. Each member must be forced, if necessary, to contribute something of sacrifice to the good of the profession. And why should they not make this sacrifice? Few good things in this world have ever been accomplished without sacrifice from someone. The greatest sacrifice of all times was God's giving his only begotten son, Jesus Christ, to suffer and die on Calvary for the redemption of the sins of humanity.

Sacrifice of self for the common good is the theme of that beautiful verse from the poem, "The Sons of Mary and Martha." "Cleave ye the wood or lift ye the stone to make some path more fair or flat. Lo, it is

black already with blood some son of Martha has spilled for that. Not as a ladder up to Heaven nor as an alter to any creed, but simple service simply given to his own kind in their common need."

Some time ago in the president's page of our State JOURNAL, I made the suggestion that physicians of our State be urged to stand for election to the Senate and House of Delegates of our State Legislature. I do not know how many have entered these political lists or how many have been nominated. I hope there has been a large number. We should support them, not with the thought that they would be instrumental in getting through our State Legislature, measures of class legislation which would favor the medical profession, but rather, because they, as physicians, know the kind of laws that would be of benefit not only to the medical profession, but to all the people of our State. Let us get the records straight! We seek no special privileges, but we intend to fight for our rights. These medical legislators would zealously guard the rights of our profession against the onslaughts of all the cults and quacks who are forever seeking to tear down our profession to the end that they may supplant us in the esteem of the people. We have no right to ask or expect special privileges or special laws favorable to our profession. We have every right, aye, it is more than our right, it is our duty to insist that our Legislature make no laws which will permit a member of any cult to be licensed to practice medicine, unless this person has had adequate training for the work and has complied with all the requirements of medical practice that is exacted of our own profession. To require less of such an applicant would again be class legislation.

Almost every physician within our State knows one or more of the laymen who are legislative candidates. It would be wise for each physician throughout the State to see his legislative candidate, or candidates, to make sure our position is known as to what we expect of legislation affecting medical practice. Too often the laymen think we are actuated by selfish motives when we seek their assistance in obtaining decent medical legislation. You, who are personal friends of these candidates, perhaps the physician of their choice, can do much to educate these men along the line of desirable medical legislation. If we advocate and expect such medical legislation as will be for the best interests of all the people within our State, then shall we have acted wisely and we shall gain in prestige and the love of our fellow men.

I think I know the organized medical profession of our State well enough to pledge here tonight that we will ask for the things that are right, seemly and just, and not one iota more.

There is another phase of medical practice in our State that vitally affects both the physician doing this line of practice and the people to whom this service is rendered. Namely, contract practice and the hospitalization of the miners working in the coal fields. I wish to state that I have no grudge against the so-called list practice. I have done this work myself and do not think I was stultified by this line of practice or lost any of my ideals as a physician. My whole interest in this subject lies in the facts that many physicians doing contract practice have not been accorded the income that their services merited. Personally, I shall never be satisfied until the physician doing list practice receives the full amount of the money checked-off from the men to pay for the physician's service, plus a reasonable fee for compensable injuries. The thought of any industry checking off money from their employees for the purpose of providing these employees with a physician and keeping any portion of this money, except for a small amount for bookkeeping involved is unconscionable and indefensible. However, in working out any program for the relief of this situation, due care must be taken not to jeopardize the physician already doing this work. Many of these physicians are young men recently out of school, sorely in need of employment, perhaps in debt for their medical education. As the matter now stands they

know that their places could be filled without difficulty by other young men in like circumstances within twenty-four hours. Indeed, the problem must be approached with care, and good judgment used in its solution.

Regarding hospitals, particularly those in our coal fields, our Association has the right to insist that the check-off for the hospitals be kept separate and distinct from the check-off for the physician. This would correspond to the dictates of the Council of the American Medical Association, and would not run counter to these dictates as it does when the check-off for the physician and the hospital are lumped together. Perhaps it is too much to hope that there could be worked out a uniform check-off of fees for all the hospitals and physicians in our State taking care of this contract work. Differences of standards, of upkeep, and overhead expenses will likely make this impossible.

Another grevious situation existed in the coal fields of West Virginia prior to the last meeting of our State Legislature. That was the checking-off from the miners of a sufficiently large amount of money for the hospital not only to take care of his ordinary needs of hospital service for himself and family, but also enough to take care of his compensable injuries, rather than these compensable injuries being paid for by the State Compensation Department out of the State Compensation Fund. Our State Legislature outlawed this practice and justly so. Outside of a few hospitals in the State, this condition has been rectified and the hope is entertained that these few will soon see the error of their ways.

Some of the coal corporations in the southern counties of the State employ a number of physicians. These corporations check-off from all their employees and place this money in one lump sum, out of which each physician receives a monthly salary. Some maintain their own hospitals and are able to show that their hospitals are losing a tidy sum of money each month, but these hospitals are caring for the compensable injuries of these corporations and are not asking the compensation department of our State to pay these hospital bills. All the compensation department is paying in these cases is the weekly benefit to the miners, and no hospital bill or bill for medical service is ever rendered. No wonder, then, that these companies are able to keep their compensation rate down to a minimum, and thus save themselves thousands of dollars annually. This is just another way for the corporation to shift the burden of caring for their injured, whose injuries were sustained in line of duty. The miner pays for it in the check-off intended for the physician. The physician loses his just reward because the corporation either keeps the major portion of the check-off or diverts it to other purposes. It matters not that the corporation may put on a welfare program, giving free dental service to the miners' children, free glasses, free serums of all kind. This is only a sop and a blind and does not conceal the ugly fact that the money the miner is charged for his physician's service is being diverted to other purposes and the physician is being defrauded. The welfare work these corporations are doing is very fine indeed, and would be a worthy accomplishment if paid for by the corporations or even if checked-off from the miners' wages for welfare work, but when this money is taken away from the physician who has actually rendered the service and to whom it belongs, it is very poor taste indeed.

One of my predecessors a few years ago created quite a furore within the State when he demanded in his presidential address that all the personnel having to do with the care of the sick and mentally afflicted of our various State institutions be appointed on their merits and their ability to perform the services demanded of these positions, rather than being appointed by the Governor of our State for political services rendered. This, it seems to me, is so evident as to require no further argument. But this method of appointment still continues. These positions are still political footballs, subject to change at any time there is a change in the political allignment

of our State, or often when there is no change, provided the physician in charge has failed to guess aright his own party's successful candidate for Governor in the primary. This, I submit, is a deplorable situation. Never can we expect to have these institutions up to the standard they should attain until the personnel is taken out of politics and put on a civil service basis. Our own State Medical Association should have a very definite part in the naming of these men until some sort of civil service can be instituted, not necessarily to dictate these appointments, but to act in an advisory capacity to the end that men of ability and standing in our profession be selected. Then we shall begin to have some order and efficiency in our State institutions to which our unfortunates are committed. These unfortunates will have a much higher grade of medical service, and the taxpayers of our State will be saved thousands of dollars annually.

It has been a pleasure for me to serve this Association as your president. It is an honor I shall treasure as long as I live. Beyond words to express I am grateful to you for the honor you have so graciously bestowed upon me. The duties of the Association have carried me far and wide over our fair State and our State is fair indeed. No scenery more grand or beautiful can be found though you search to the ends of the earth. It has been a keen pleasure to visit the various component societies and meet new friends and renew acquaintances with the old. Everywhere I have gone, I have been extended courtesy far beyond my merit. It has been my duty to appoint numerous committees, some of whose work was very laborious. I have received the willing acceptance of the men comprising these committees, and also of the Orator in Medicine and Surgery. Some of the ideas developed in this paper were suggested to me by the chairmen of some of the key committees of our State Association, by past presidents of our Association, and other friends. If any of you recognize your own brain child in some of the ideas I have expressed, you know it is the highest compliment your president can pay to your judgment and to your integrity.

For all the many acts of kindness that have been shown to me, I could have nothing in my heart tonight except a feeling of deep gratitude. If I have made mistakes, and I am sure there were many, they have been mistakes of the head and not of the heart. If I have been able in any small measure to strengthen and cement our Association, I shall be amply repaid for any work I have done or any sacrifice I have made.

I desire to express the hope, yes, more than the hope—the belief that these vexing problems which at this time so sorely beset us, can, and will be solved; then we may look forward to that serene existence which the poet, Longfellow, so aptly depicted when he said: "And the night shall be filled with music and the cares that infest the day, shall fold their tents like the Arabs and as silently steal away."

BIRTH CERTIFICATES

Most of us have no proof of citizenship other than a birth certificate, so aptly termed "Baby's first citizenship papers." We expect the privileges of citizens under all sorts of conditions, never realizing that some day those privileges may be withdrawn because of the failure of parent, doctor or local registrar to record properly a few basic facts concerning birth. "Can You Prove You Are a Citizen?" asks Dr. Halbert C. Dunn in the May *Hygeia.*

The necessity for proof of age is rapidly becoming a paramount social need. With the passage of social security legislation old census records are being worn out with constant searching for proof of age of individuals for whom no birth certificate was recorded.

To a certain extent the birth certificate plays a part in the public health program. The success of the child health program depends in part on knowledge of the occurrence of births. The public health worker is also dependent on a prompt knowledge of deaths resulting from contagious disease. The occurrence of disease and the cause of death are essential knowledge which must be obtained if the community is not to suffer.

RECENT TRENDS IN TREATMENT OF FRACTURES*

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NEXT to the preservation of life and limb, the restoration of an extremity to complete function in the shortest possible time is the most important object in the treatment of fractures. The body is supported internally by a scaffold of bones which make up the skeleton and a fracture has been defined as the solution of continuity, or the breaking, of this framework. Injury to the blood vessels, nerves, muscles, joints and skin with the resultant effusion of blood, swelling due to edema, and loss of external covering, must also be considered.

The injuries resulting from fractures however, are not limited to those occurring at the time of the accident. Unwise attempts of the patient to use the injured extremity, misdirected efforts of assistants at first aid and insufficient splinting during transportation and examination often cause increased damage to the soft tissues as well as dissemination of contaminating organisms when the injury is a compound one. The patient who is subjected to increased dangers of shock, damage to the soft tissues, and infection can scarcely be compared with the patient who is efficiently and promptly "splinted where he lies".[1]

The problem of proper transportation of the injured demands the attention of the medical and nursing professions as well as ambulance drivers, first aid stations, rescue squads and hospital personnel. Transportation in traction as is used in many places at the present time, is the most efficient method and is simple in application. The commonly used long side splints are difficult to apply and transport and they do not prevent overriding, immobilize sufficiently, nor stop pain. Where proper splints cannot be obtained, however, the use of the latter is more desirable than no splinting at all.[2]

After the patient has been made comfortable and measures taken to prevent or combat shock, the first problem in treatment is to provide a competent substitute for the former internal support. After careful and gentle examination (including radiographic study, if available), the method of fixation should be decided upon before reduction is attempted. The skill with which any apparatus is used is of greater importance than its intrinsic value. A splint is used to maintain a reduction and permit limited use, and not to reduce a fracture.

Only when satisfactory reduction cannot be obtained and maintained by closed methods, is open operation indicated, provided, of course, the expected result of the latter is sufficiently better than the former to justify the additional risk, and there are no contraindications. In a certain few types of fractures it is generally accepted that it is impossible to obtain satisfactory reduction, except by operative methods, and then only by those who have the necessary training and skill, and access to hospital facilities and surgical equipment with which to do this work properly.

The emergency or initial treatment of a fracture is usually carried out by the general practitioner who in fact often continues in charge of the individual patient. Delay in, or improper initial treatment in the simple fractures, may be followed by serious consequences, but the treatment of difficult and complicated fractures will always remain a field for skillful and experienced surgeons when such aid is available.

The constant requirements in the treatment of any fracture are: good reduction, un-

*Read before the District Nurses' Association, Morgantown, West Virginia.

interrupted fixation until bony union occurs and maintenance of normal nutrition of the extremity. This may seem paradoxical since fixation appears to imply immobilization of soft parts while maintenance of nutrition through exercise of the soft parts suggests motion of the skeleton, and attempts to carry out each of these independently, have resulted in fixation over too short a period. The dangers of prolonged immobilization as seen in atrophy of muscles and bones, contractures, and joint stiffness must be considered as also the pain, delayed union and excess callus formation of too early motion.

It remained for Boehler to show that one way of meeting these apparently antagonistic requirements was by the use of a non-padded cast. This cast consists occasionally of one, but usually of two longitudinal strips of plaster which have been carefully prepared. Such strips are moulded to the exact contour of the arm or leg, directly on the skin. It is not necessary to shave off the hairs and the skin should never be greased as it is desirable for the plaster to adhere to the skin. Wrinkles must be smoothed out and joints must not be moved after the plaster is applied. As soon as the splint has hardened sufficiently, it is incorporated in a circular plaster bandage. This is never tight but is applied by unrolling of the plaster in a spiral fashion about the arm or leg. Careful application of the cast is most important and should never be carried out by a poorly trained assistant. It must be carefully moulded and accurately trimmed to obtain proper fixation and satisfactory functional use. In the upper extremity, movement should be encouraged as soon as the plaster is hard. Within twenty-four hours, the plaster has usually dried sufficiently that, if desirable, a walking iron may be incorporated and weight bearing permitted.[3]

The plaster cast has been held responsible for many of the calamities of fracture treatment during the past decade. However, many casts have been applied to poorly reduced fractures, and faulty technique in the application, especially in the padding, has resulted in severe deformities.

Technically, the use of the non-padded plaster cast will maintain uninterrupted fixation. By the proper application, pressure disturbances may be avoided, and vascular disturbances reduced to a minimum, through improvement in the circulation. This type of fixation decreases muscle spasm, and increases the normal blood flow, thereby lessening venous stasis and peripheral edema. This stimulates callus formation, and allows movement of free joints causing muscular activity and maintaining muscle tone by "muscle-setting" exercises. Active normal use of an extremity is natural physiotherapy and is superior to artificial physiotherapy in that it is continuous rather than intermittent.

A demand for better anatomical (and thereby functional) results in the treatment of fractures has increased with the spread of x-ray facilities, and the faculty of a layman to recognize deformity on an x-ray film. The result has been the development of skeletal traction by Steinman, Kirschner, Boehler[4] and more recently, West[5] and Griswold.[6] Traction applied to the distal fragment of a long bone with countertraction to the proximal fragment is most efficient if first applied early, with the patient anesthetized, but as commonly used is unsatisfactory due to the inadequate force applied. Once reduction is obtained, the splinting action of the taut muscles prevents recurrence of deformity. The control of the known forces of traction and countertraction as transmitted to the fragments through the muscles attached to them, has made the exact reduction of a fractured bone a problem of engineering which requires the utmost precision.

The economical demand for relief from the burden imposed by the large numbers of hospital beds that are occupied by patients with fractures has led to search for safer ambulatory methods in their treatment. In addition, the all too frequent occurrence of embolism, appearing from the second to the fifth week of recumbency has aided in the devel-

opment of more exact means of controlling the apposition of fractured bones in patients who are ambulatory and no longer under constant observation.

Anderson showed that accurate reduction and uninterrupted fixation in a convenient cast were aided mechanically by the use of Steinman pins placed in the proximal and distal fragments and firmly imbedded in the plaster. The position is controlled by the placing of the Steinman pins, after insertion, in an apparatus by means of which extension, rotation, impaction, etc., are accurately controlled under direct fluoroscopic vision.[7]

Griswold has supplemented such a mechanical device with the use of the non-padded cast, also used by Caldwell, and which makes possible the active use of the extremity, including weight bearing from the start. This latter is obtained in fractures of the lower extremity by the incorporation of the above mentioned walking iron after the cast has dried and has been on long enough to discover whether or not it is going to cause any discomfort. "The psychic effect of transforming an incapacitated injured patient at once into a healthy person with a bandage on his limb, has a favorable influence in preventing compensation neuroses".[8]

Extremely careful observation is necessary to avoid accidents. Elevation of the injured extremity decreases swelling. Sensation and color should be normal, and the pain should never be combatted with large doses of morphine. The pain of fractures varies in patients and the pain of circulatory disturbances may become very great. Pain at the site of the Steinman pins is rare. In doubtful cases, the cast should always be split, and removed, if necessary. Regardless of skill and training, the surgeon should visit fresh cases twice daily and the nurse should always call him if she is in doubt about the patient's condition.

When sufficient union has taken place, the Steinman pins are removed and a new plaster cast with a walking iron is reapplied. These casts remain in place for a longer time than the usual fixation and generally until complete unaided weight bearing is safe and painless, the usual convalescence with splint or brace having been cared for by the cast. It is often found that the patients have 50 to 75 per cent active function of joints on the first attempt at motion. Patients who for specific reasons have been unable to use their limbs during immobilization are, of course, exceptions.

It is generally recognized that in fractures of the shaft of the femur, some form of skeletal traction is preferable. Of course, in small children this is usually unnecessary and not advisable. Careful selection of cases is necessary in order that each may be given the best care. Reduction of the fracture by pins placed above and below the lesion and fixation of these in plaster is being developed for such cases but as yet, it is an experimental procedure and not applicable to all cases.

Fractures of extremities involving joints, especially the knee, usually show better results with traction and non-weight bearing during the early period. Later, full protection may be afforded by the plaster.

Special operative problems concerning the hip have developed that place its treatment chiefly in skilled hands. It has been possible, however, by the use of these various treatments in specific instances to lower the percentage of non-unions from 50 to 30 per cent. The most satisfactory procedure concerns, first of all, an accurate and complete reduction of the fracture. This is accomplished under anesthesia, either general or local, with the manipulation described by Leadbetter,[9] consisting briefly of traction in a flexed position, internal rotation and extension. One may determine complete reduction by allowing the heel of the injured leg to rest on the palm of the hand. If reduction has been obtained, the position of the heel remains fixed and external rotation does not occur. This position may then be maintained by fixation in a plaster spica and is held in better position if a Kirschner wire is placed through the lower femur and anchored firmly in the plaster under tension. If the proper equip-

ment is obtainable and the operator competent to use it, a "Smith-Petersen nail" consisting of a steel pin with three blades placed back to back, or specially prepared steel pins, may be inserted through the neck of the femur, either by completely exposing the hip or through a lateral incision, the course being controlled by x-ray. The latter method is the most satisfactory, but there is more chance for error and the procedure requires numerous exposures to the x-ray. Once the operation is completed these patients can be more or less ambulatory.[10]

The Roger-Anderson well leg splint[11] is useful in the treatment of intertrochanteric fractures, and fractures of the pelvis, but its use in fractures of the neck has not been as satisfactory as the above methods. Its use in older individuals allows for freedom in the use of the body that is of great benefit in avoiding complications associated with recumbency and fixation in the aged. Here, also, functional use and weight bearing often are of help in turning a delayed union in the right direction.

The use of steel wire or pins in the upper extremity is usually necessary only in those fractures that are comminuted and tend to shorten. By the use of wire or straw finger traps, traction in the forearm can be maintained in any direction if used with fixed counter traction on the upper arm. This has aided materially in the correct apposition of fragments in fractures involving both bones of the forearm. Traction through the olecranon is only occasionally necessary in fracture of the humerus, and usually, only in oblique fractures that tend to slip and produce overriding.

The assumption that in fractures of the upper part of the humerus, the long distal fragment must be placed in line with the short fragment has been found to be erroneous under certain conditions. The short fragment can be controlled by use of the long head of the biceps, which bridges the fragments, and the remaining untorn periosteum. An intact long head of the biceps tendon is of course necessary for the use of this method. Using local anesthesia in the fracture site, the arm is flexed at the elbow. With a band placed around the forearm, and used as a stirrup by the foot, the free hands support the forearm at a right angle. Steady traction downward with the foot is maintained until the fragments are approximated. A heavy plaster cast is applied from the fracture site to the wrist. The forearm is then held by a sling at the wrist, allowing the weight of the arm and cast to act as a traction force. By proper after care, function is restored almost as soon as union is complete. This is of great advantage especially in elderly individuals who do not tolerate a spica or aeroplane splint.

Fractures of the hand and foot, including the fingers and toes which are comminuted or where the fragments are displaced, are best treated by traction which is maintained by a small wire through the pulp at the end of the digit, and attached by a rubber band to the splint, with counter traction by splint or preferably, plaster applied to the forearm or lower leg. This prevents contractures of the tendons as well as maintenance of the fracture in good position.

If seen within the first six to eight hours, all compound fractures should be debrided. Only gentle irrigation should ever be used and loose fragments should not be handled roughly or removed unless entirely free. Only accessible nerves and tendons should be sutured except for the skin, which should be closed without drainage. If the patient is in shock or does not come under observation until a longer period has elapsed, the wound may be debrided and gently packed with vaseline gauze as these are in the potentially infected period. Plaster of Paris is relatively sterile and the cast may be applied in these cases with very small dressings. It is, perhaps, safer to allow such patients to remain in a reduction apparatus until a reasonable period has passed before applying the plaster.

Anesthesia is obtained by the use of general, spinal or local anesthetics. The most efficient, if used within eight to 12 hours, be-

fore the blood is clotted, is obtained by direct infiltration into the hematoma at the fracture site. This does, however, potentially convert all simple fractures into open injuries and is necessarily a procedure requiring careful technique. This anesthetic is also used for the insertion of steel pins.

In the treatment of head injuries, it is universally recognized that the damage to the contents of the cranium is of greater importance than the presence or absence of a fracture of the skull. The whole problem of treatment depends upon the underlying pathological condition. The greatest consideration must be given to the damage to the intracranial contents. Nearly all of these patients who have a serious injury are in a condition of shock and this must be treated immediately to preserve life. The majority of linear or slightly depressed fractures are of little consequence except as they involve the intracranial structures. A thorough, complete examination is very important but patients who are extremely ill must not be disturbed too much, and an x-ray should never be considered in these cases until definite improvement is observed, except for the probability of depression in a patient who is becoming worse. Continued, careful observation of a patient who is being kept as quiet as possible, enables one to vary treatment as the symptoms demand. In general, those cases that are operated upon immediately seldom live. The conservative, non-operative treatment of fracture of the skull should not be permitted, however, to interfere with operation in those patients who show definite indications for it. Usually, the treatment is first instigated against shock, and then followed by a period of quiet, dehydration and careful observation.

There is a widespread lay impression that fracture of the vertebra or "broken back" causes immediate paralysis. This idea results from the recent past in which x-ray studies were often not available and lesser degrees of injury to the spine escaped under the diagnosis of "sprain." Fracture or dislocation with marked displacement can occur without severe symptoms, especially in the cervical region. Crushing of bone or traumatic spondylitis and arthritis, occasionally associated with considerable pain are usually the result of failure to diagnose the initial condition and lack of proper treatment. The failure of recognition and treatment of cervical conditions is due to the lack of nerve pressure symptoms and the difficulty of obtaining conclusive x-rays of the multiple processes and facets. When the diagnosis has been made, immediate and positive reduction by closed technique should be used, followed by full immobilization in a plaster cuirass. In the dorsal and lumbar spine, hyperextension usually by manipulation under anesthesia aims at reconstruction of the spine. Immediate restoration of the body and position of the vertebra can often be obtained. The torso is then immobilized by a plaster body jacket with the spine hyperextended. With those patients in whom such a procedure is contraindicated, due either to shock, age, debility, etc., gradual stretching over a hyperextended gas pipe frame will often accomplish the same result. Reduction of a dislocated or fractured vertebra should always be attempted before operative measures are instituted and the presence of a block or pressure on the cord should be demonstrated before a patient is subjected to laminectomy. In those cases in which the injury is severe, recumbency is necessary for eight to 10 weeks. The period of complete immobilization is three to six months, and they should usually wear a protective brace for 12 to 18 months. With injuries of lesser degree, immobilization is necessary to prevent slight deformity and traumatic arthritis in the joints of the vertebral column.[12] Stretching, hyperextension and muscle-setting exercises, are of great importance in the convalescent period.

Although with proper care we find a small percentage of functional failures, considering the skeleton as a whole, even many of these may eventually be corrected by operative measures. The use of foreign material such as steel plates, beef bone and ivory pegs, etc.,

has decreased in favor of bone grafting with definite improvement in the results shown.

In considering the use of the various mechanical aids in the treatment of fractures, it might be said that we are living in an age of gadgets. If this is true, then the stethoscope, opthalmoscope, cystoscope, skin clip and other aids in the diagnosis and treatment of injury and disease must be included. A study of the history of medical progress shows various eras in which a period of new discovery is always accompanied by countless variations in the enthusiastic use of new methods. Following this period of experimentation, the better aids are retained and gradually improved upon by those competent to do so. Constant progress is necessary however, in order that we keep pace with the every-day improvements about us.

BIBLIOGRAPHY

1. *An Outline of the Treatment of Fractures.* American College of Surgeons, 2nd Ed., 1933.

2. Kennedy, R. H.: *Transportation of the Injured.* Bulletin of the American College of Surgeons, 1935.

3. Schnek, Fritz: *The Technique of the Non-Padded Plaster Cast.* Vienna. Wilhelm Maudrick, 1932.

4. Boehler, Lorenz: *The Treatment of Fractures.* 4th English Edition: translated by Ernest W. Hey Groves. Wm. Wood & Co., Baltimore, 1935.

5. West, W. K.: *Skeletal Traction in Treatment of Fractures of Shaft of Tibia and Fibula.* J. A. M. A. 101:2036-2038. Dec. 23, 1933.

6. Griswold, R. A.: *Major Fractures of the Tibia and Fibula.* Surgery, Gynecology and Obstetrics; 58:900-902. May, 1934.

7. Anderson, Roger: *Fractures of the Tibia and Fibula, An Automatic Method of Treatment.* S. G. & O. 58:639-646, March, 1934.

8. Griswold, R. A.: *Fracture of Both Bones of the Leg, Treatment by a Modified Boehler Method With a New Apparatus.* J. A. M. A.; 104:35-38, Jan. 5, 1935.

9. Leadbetter, G. W.: *A Treatment for Fracture of the Neck of the Femur.* J. of B. & J. Surg.; Oct. 1933, p. 931.

10. Smith-Petersen, M. N.: *Intracapsular Fractures of the Neck of the Femur.* Arch. Surg.; 23:715, 1931. Wescott, H. H.: *A Method for the Internal Fixation of Transcervical Fractures of the Femur.* J. of B. & J. Surg.; April, 1934, p. 372.

11. Anderson, Roger: *A New Method for Treating Fractures Utilizing the Well Leg for Countertraction.* S. G. & O., 54:207-219, February, 1932.

12. Feoster, O. O.: *Delayed Appearance of Deformity in Vertebral Body Fractures.* J. A. M. A.; 102-588, February 24, 1934.

CHRONIC FEMALE URETHRITIS

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WE wish to present for your consideration, a subject which has been given little or no thought by our profession until the last few years, a subject of interest not only to the urologist but to the gynecologist, obstetrician and general surgeon as well, that is, the most common urological condition in women, chronic urethritis.

Embryology and Anatomy: Embryologically the urethra begins and develops from a slight constriction of the urogenital sinus. In the female this forms practically all of the urethra which corresponds with the posterior urethra in the male as far anteriorly as the verumontanum. The adult female urethra is approximately four centimeters long and has a diameter undilated of about six millimeters. It is placed behind the symphysis pubis and is embedded in the anterior wall of the vagina. It is composed of three layers: muscular, which is circular in character and is a continuation of that of the bladder, a layer of spongy erectile tissue which contains many plexuses of veins and a few unstriped muscle fibers and a pale mucous layer which is continuous anteriorly with that of the vulva and posteriorly with that of the bladder. The anterior mucosa contains the Skene's ducts and many small mucous glands. There is some controversy as to the presence of glands in the posterior urethra which we shall consider later.

Etiology: 1. Infection, (a) Specific; (b) Non-specific. 2. Trauma. 3. Sexual.

1. *Infection, (a) Specific:* Gonorrhea plays an important part in the cause of this condi-

tion, the same as it does in the male. Many of the small, contracted external orifices, strictures and chronic granulations date back to an old gonorrhea years ago.

(*b*) *Non-specific:* When we consider the anatomical relation of the urethra to the vagina, we wonder why the urethra is not more often infected than it is, lying as it does in a virtual cesspool of bacteria. Any organism which can produce a vaginitis or cervicitis may produce an infection of the urethra, but the colon and coccal groups are the common invaders. Although the trichomonas vaginalis is a common cause of vaginitis, we have not been able to show that it produces a similar condition in the urethra. Also, urethritis may be the result of a chronic upper urinary tract infection or it may be metastatic from a distant focus of infection.

2. *Trauma:* Again, if we consider the anatomical position of the urethra, situated as it is between the anterior vaginal wall and the pubic arch, we can see that it is exposed to considerable trauma, by the presenting head, in long hard obstetrical deliveries and by thoughtless, rapid forceps delivery. Most efforts to protect the perineum are at the expense of the urethra and we believe that many of the strictures we find have their beginning in an injury during a hard labor, perhaps, several years previous.

Among the wonders of this modern age is the urethra being injured during the sexual act; nevertheless, it does occur occasionally. Forcible entry into an unprepared dry vagina may produce considerable trauma to the urethra and it is not uncommon to have a patient complain of a drop or two of blood from the urethra following such an unprepared intercourse.

Again in this modern age, our fair sex does not limit her activities to that of the olden days but more closely each year attempts to take up the activities of the male. Therefore, we more often see injuries of the urethra in the female which were rare several years ago. Although the female urethra is better protected than the male from injury by straddle falls, as horseback riding and bicycling, it may be severely injured from such falls. The increase in automobile accidents with the increase in pelvic fractures has caused a definite increase in the number of ruptured urethras in the female.

Also, it is not unusual to have the urethra injured by some type of foreign body used in an attempt to produce an abortion or to satisfy the sexual desire.

Next to obstetrical deliveries the most common cause of trauma to the urethra is by repeated catheterization by inexperienced nurses and internes and by the use of rough, worn-out catheters.

3. *Sexual:* Another etiological factor in the production of this condition is a chronic passive congestion or as Beach[3] has so aptly termed it an "erotic urethritis." A similar condition, to that found in the male, is produced in the female by repeated, long unsatisfied sexual excitement. Three types of cases are commonly seen: the modern young woman who limits her sexual adventures to petting parties seven nights a week, the middle or old age spinster who derives her sexual pleasure from some inanimate object and may or may not reach a climax, and the married woman whose husband's only thought during the sexual act is to satisfy his own greedy desires, and has finished with the sexual act before an orgasm is produced in his wife and, to use a common expression, she is constantly left out in the cold. These practices lead to a chronic passive congestion of the urethra with all the attending symptoms of an inflammation.

Pathology: Various stages of an inflammatory process may be found from a simple chronic inflammation to strictures of various calibres and density. Early in the proximal half of the urethra particularly surrounding the sphincter, we may find an intense reddening of the mucosa, or areas of definite granulation tissue, the typical beefsteak appearance we are so familiar with in the male. This granulation tissue may extend into the bladder and form a definite collarette about the in-

ternal vesical orifice. In addition to the granulation tissue we may find many small brownish looking cysts usually grouped longitudinally along the folds of the mucous membrane. Further in the inflammatory process a definite hypertrophy of the mucosa may be seen and scattered here and there are well defined vascular loops, which Folsom believes develop into the next stage, definite polypoid masses of various sizes and description.

We believe there is a possibility, if this chronic process is left alone, of an hypertrophy of the trigonal muscle and bladder neck mucosa creating a similar process to that described by Hyams in the male, the prefibrotic bar. This eventually leads to a true median bar formation. Several cases have presented similar pictures with all the bladder signs of a bladder neck obstruction except the residual urine.

There is still another factor we must consider in the pathology of this condition. Formerly we were taught that the female urethra is remarkably free, except in the anterior third, of glands and ducts. Recent investigation by Folsom, Beach and others tend to show this is not correct. In many cases a definite grouping of tubular glands is found located around and opening into the posterior portion of the female urethra, and these polypoid masses which we find have a definite adenomatous structure. These tubular glands are in reality rudimentary prostatic ducts, and the condition thus formed corresponds with the subcervical or Albarren lobe hypertrophy of the prostate. An occasional case makes us think this may be the fact, but the pathologists have not been able to agree as to the true structure of these masses.

Symptoms: 1. Local to genitourinary tract.

Bladder irritation, frequency, burning and pain are the cardinal symptoms of many urological conditions. Chronic urethritis is the most common disease which produces these symptoms. In addition to the frequency, burning, constant desire to void, rarely dribbling, sometimes painful intercourse and occasional hematuria; pain may be referred anywhere along the urinary tract. It may resemble ureteral pain from stone, so-called strictures, or even a definite renal colic.

2. Referred Pain:

Through the sympathetic nervous system by contacts through the hypogastric, mesenteric, solar and aortic plexuses pain from urethritis may be referred to almost anywhere in the lower abdomen or pelvic regions, as dull aching pain in either loin, pain in either iliac region and low sacral or lumbar backache. Thus we can see from this sympathetic hook-up, when the pain is referred to the right lower quadrant a mistaken diagnosis of chronic appendicitis can be easily made when it is the urethra expressing itself in an odd manner.

Again, since we are learning more each year about the autonomic nervous system, let us consider for a moment, these referred pains from the gynecological standpoint. Who can estimate the number of exploratory laporotomies that have been done for this simple condition, how many tubes and ovaries have been sacrificed, how many uteri have been removed, how many currettments and dilatations have been done, how many various types of suspensions have been done to relieve uterine pressure from the bladder when it is perfectly normal for the uterus to press on the bladder, and today how many presacral nerve resections are being done for vague pain when the cause lies in the urethra?

Diagnosis: In arriving at a diagnosis of this condition, we usually make an examination of the vulva and vagina first. Quite often all that is necessary to make a diagnosis of a small, contracted external orifice is a good head light and the palpating finger. By stripping the urethra with the finger along the anterior vaginal wall we may be able to express a drop or two of pus from the meatus or we may be able to palpate nodules and indurations along the urethra. Often these cases have a normal urine when the catheter is used, but if we use the two glass test, as we do in the male, the first glass will often show us the source of the trouble.

Since almost all strictures are found in the anterior two-thirds of the urethra, further examination is made with the bulb bougie. Quite often we may not notice any hang to the gentle passage of a bougie but on removing it, it is followed by a small amount of bleeding which makes us suspicious there may be some granulations. The normal urethra has a caliber of thirty to thirty-two French, so we consider any hang to a twenty-six French bulb bougie as a definite contraction of the urethra. We have found all calibers from two cases admitting a filiform with difficulty to many of various calibers to the twenty-six French.

While the ordinary cystoscope will tell us something about the condition of the bladder neck, further examination of the urethra is best made with the McCarthy panendoscope. The various stages of the pathology which has been described are best seen as the scope is slowly withdrawn from the bladder.

An irritable, extremely sensitive urethra makes us suspicious of an erotic urethritis. Speculum examination of the cervix is usually necessary in these cases, which will show the bluish injection and slight erosion that is common to incomplete sexual life. In addition there may be inequalities and striations of the labia, localized redness of the vulva, old lacerations about the meatus and cliteral adhesions. We find questions as to sexual practices bring forth most information after an examination has been made and we have gained full confidence of the patient.

Treatment: 1. Prevention:

Prophylactically it is evident that much can be done to prevent chronic urethritis.

In our gonorrhea cases the urethra must be examined for pockets, indurations and strictures the same as in the male, before they are dismissed as cured. The non-specific cases should be handled in the same way.

Urethral rupture requires primary repair for the best results. In obstetrical deliveries episiotomy not only helps to protect the perineum by making a repairable wound but also serves as a protection to the urethra as well. We believe that not only the perineum, but the urethra as well should be carefully examined after each delivery and that at least at one follow up examination a full-sized sound or bougie should be passed to the bladder to determine the presence of a stricture.

We believe that only smooth, well lubricated soft rubber catheters should be used for catheterization. Glass catheters should have no place among our equipment. Postoperatively the catheter should be used only when it is necessary to keep the patient comfortable. The indwelling catheter causes an infection of the urethra so it should not be left in place any longer than necessary and where possible it should be changed every four to five days.

The prevention of erotic urethritis presents a big problem. In spite of the teaching to the contrary by the churches from Moses to the present time, the sexual apparatus is just as much a part of our anatomy as the digestive apparatus. If we consider the influence of Venus, the popularity of Diana combined with a little bit of Bacchus we can realize how much progress we can make.

2. Actual:

The actual treatment of chronic urethritis is relatively simple. First and foremost is the determination and removal of the cause if it is still operative. As in all other diseases distant foci of infection must be eliminated. The upper urinary tract must be freed of infection. Cystoceles and poor support to the bladder floor must be corrected and it should be done before these patients get too old. Attention must be given to the elimination of infection from the cervix and other parts of the genital tract.

The erotic urethritis cases need special attention. A wider dissemination of sexual knowledge, instruction to the husband and wife, elimination of impotence in the male, the clearing up of irritation of the cervix and vulva and the freeing of clitoral adhesions may help in the cure of this condition. But in a great many cases we can only thank

Pandora for closing the lid of her magic box in time to leave our only resource—hope, hoping that Father Time and Mother Nature will bring about a change of habits which will eventually lead to a cure.

The aim of all treatment is to make urination painless, of normal frequency and to establish a normal urinary flow.

Orally, these patients can be made more comfortable by the use of caprokol, oil of sandalwood, large doses of tincture of hypocyamus and by a large consumption of water.

Locally, for the simple chronic infection cases, dilatation with the instillation of mild solutions of silver nitrate or argyrol into the posterior urethra and trigone at five to seven day intervals is all that is usually required. The further advanced cases require urethroscopy with the painting of granulations with a 10 per cent solution of silver nitrate at approximately ten day intervals. The far advanced cases with papillomatous formation may require the destruction of the growths by fulguration or their removal with an electric current. The rare cases of bladder neck obstruction may require resection of some of the tissue from the bladder neck in order to establish a free outlet from the bladder.

It is necessary to keep in mind that all these cases are potential or actual urethral strictures and that all strictures must have persistent gradual dilatation to a full, or even in a number of cases, overdilatation with a Kollmann dilator. As in the male, the gradual dilatation is the treatment of choice as it produces a better ironing out of the scar with less tendency to contract. It should be the aim at each dilatation not to rupture a scarred area, but rather the dilatation should be of such degree to as progressively stretch the scar up to the desired point and thereafter dilatation should be repeated sufficiently often to retain this diameter. Even then the tendency of all strictures is to recur, so it necessitates a return of the patient, long after complete relief has been obtained. In some cases it is necessary to tell the patient, as Keyes has said in cases of stricture in the male, to celebrate the Fourth of July and Christmas by returning for the passage of sounds.

Conclusions: In conclusion we must remember the following facts:

1. Chronic urethritis is the most common urological condition in the female.
2. It may result from infection, trauma or chronic passive congestion.
3. The symptoms may be local in the urinary tract or referred to various regions of the lower abdomen and pelvis.
4. The aim of all treatment is to eliminate the cause, to make urination painless, of normal frequency and to establish normal urinary flow.
5. Finally, the results of treatment are uniformly good, but we must keep constantly in mind the fact that this condition has a tendency to recur.

REFERENCES

1. Folsom, A. I.: Jour. Amer. Med. Assoc., Nov. 7, 1931. *"The Female Urethra."*
2. Folsom, A. I., and Alexander, Jo C.: Jour. of Urology, Vol. 31, pp. 731-739, 1934. *"Referred Pain From the Female Urethra."*
3. Beach, Edward W.: The Urologic and Cut. Review, Aug., 1934. *"Some Observations on the Female Urethra."*
4. Hyams, J. A. and Kramer, S. E.: Jour. of Urology, Vol. 27, pp. 165-188, 1932. *"Prefibrotic Median Bar."*

CANCER MYTHS

To bury our heads in the sand and not face the problem of cancer cannot change the startling fact that over 140,000 people will die of the disease this year in this country alone; and many of these deaths will be entirely unnecessary. Dr. Robert Hayward Kennedy unravels "Myths About Cancer" in the May *Hygeia.*

Cancer is not a "blood disease" and is not directly inherited. Yet a great many people still feel that the knowledge that a case of cancer has occurred in their family should be suppressed. Cancer is no more a taint than is a broken leg or an attack of pneumonia.

To many people the mention of the name calls to mind a foul disease. This is not justifiable. With modern methods of dressing wounds and asepsis there need be nothing offensive about even an advanced incurable case.

There is no cancer age any more than there is a heart disease age.

ECZEMAS OF INTERNAL ORIGIN*

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For the purpose of convenience, all eczemas are divided into two classes: those that come from without, and those that come from within. However, strictly speaking, we do not classify eczematous eruptions due to external factors as eczema, but inasmuch as the appearance of the eruption so often mimics the true internal eczemas we use this classification more as a matter of habit than of scientific accuracy.

The word "eczema" comes from the Greek. It means "to boil out." It is a very good word to describe what really appears to be a boiling out of something within the skin. This is more particularly true of weeping eczemas which do seem to fairly "boil" at times, especially in the acute stages.

I will limit my paper tonight to the intrinsic eczemas. The first of these is infantile eczema. This is perhaps the most common one seen by the general practitioner and is truly a troublesome eruption which frequently proves intractable in spite of what is done. However, there are two types of infantile eczema—the greasy seborrheic type that is due to overloading the digestive system with too much fat, and is seen in the fat baby, while the other type which is more crusty and exudative is usually seen in the more thin babies with dry skins. This latter type is more strictly speaking the allergic eczema of children.

It is my practice when seeing an eczematous baby for the first time to try it on a diet in which most of the fat has been removed, and to prescribe locally mild tar ointment. I usually use the coal tar distillates which do not stain. A number of these are on the market and go under the name of Taralba, Taroxide, Supertah, and Zintar. These preparations are very satisfactory in the majority of cases but it is well to remember that several of them come in two strengths and the milder strength should be used first. Usually there is a slight exacerbation at the outset which subsides in a few days even under continued use of the ointment. However, if the exacerbation is pronounced, the tar ointment should be discontinued immediately and soothing applications applied such as wet dressings of Burrow's solution diluted to two tablespoonsful of the solution to a quart of warm water. If the weeping is not so profuse calamine lotion may be used. If the child when first seen has a pustular element contaminating the eczema, this should be dealt with first before the tar is applied. The best ointment that I have found for such conditions is metaphen.* This ointment is a mild, non-irritating mercury preparation with good germicidal properties. It so supersedes ammoniated mercury that I rarely use the latter.

After the pustular element has been cleared one may go on with the various tar preparations. It is interesting to note in this connection that where one tar fails another may succeed. If an eczema does not clear up under the distillate yet tolerates the full strength of the latter, then a change may be made to crude coal tar beginning with a one per cent strength in Lassar paste. If necessary, this may be increased. However, if there is a gradual amelioration of the eczema under any one ointment do not be too hasty in making a change. Sometimes in very stubborn cases I use mild doses of x-ray which give such striking results that no child should be made to suffer unduly where such prompt relief can be obtained.

*Read before the Kanawha Medical Society, February 11, 1936.

*Abbott Laboratories.

An effort should be made to determine what foods the child is specifically sensitive to in the event a low fat diet does not bring about the desired result. In my experience this has only occasionally been successful. Even when we have located a certain food it is sometimes impossible to avoid it completely and even after avoiding it the child still has trouble so you can see the problem is a difficult one.

I am not extremely convinced of the value of skin testing and rarely resort to it. It is well for one to bear in mind the important allergens in a child's diet and by eliminating them one at a time some information may be gained. In order of importance we think of the following allergens: egg (white), wheat, milk, orange, oats, potatoes, corn, peas, string beans, rice, barley, chocolate and tomatoes. Of the inhalants we have pollens, feathers, wool, horse dander and orris root. However, the latter substances are only rarely implicated.

It is interesting to note that a child may be sensitive to certain foods yet not give a positive skin reaction to them. On the other hand a scratch test with any one allergen may be negative while an intradermal test may be positive. *It is also well to bear in mind that children under four months rarely react to skin tests.* Sometimes no tests are necessary for the mother in many instances has noted just what foods aggravate her child. Regardless of foods and other allergens, practically all eczemas of infants can be cleared up by one means or another, whether it be diet, tars or x-ray.

In going to adult eczemas we frequently find on taking the individual's history that his trouble dates back to childhood. Though the greater number of children outgrow their allergic tendencies there are some who do not and they go on through life having attacks of eczema from time to time. The eczema may have an associated asthma or hay fever, both of which are but expressions of hypersensitivity. The eczema of this triad is one of the most difficult with which the dermatologist has to deal and requires much patience and investigation on the part of the physician as well as the patient.

I hope you will forgive me for mentioning that the patient's general health must be looked after. I have never been quite certain just what all that covered, but since it is so often recommended, I do not feel like I should be the first to lightly cast it aside. Yet the most remarkable thing to me is that most eczematous patients are in good health. In fact some of them are too healthy. So my first approach to them is to undermine their health and this generally takes the form of a good sized dose of castor oil.

It is my firm belief that overloading the gastrointestinal tract is one of the worst habits of the eczematous patient. I feel that through the things he eats and does not thoroughly digest, comes his eczema. Especially in acute eczematous flare-ups, nothing is more useful than castor oil. Also it is well to cut the carbohydrates and fatty foods just as in infants because sugar increases the pruritis and fats encourage constipation. The fact that castor oil is a good detoxificant has led me to the use of codium ricinoleate combined with cascara and marketed as karicin.* This preparation is useful and sometimes is the only thing that will control a chronic eczema. Of course for convenience and quick relief, sometimes cure, x-ray stands foremost. Its action is apparently to desensitize the skin to the allergen causing the eruption. X-rays should be thought of as an adjunct just like any other therapeutic measure and sole reliance should not be placed in it lest one be disappointed in the end. It is the one best single agent we have for the control of eczema, but must be used cautiously and when so used is relatively harmless. It is the abuse of x-ray that makes it dangerous.

When a patient presents himself with eczema he generally wants relief and does not care much what type of eczema he has. So it is incumbent upon the doctor to prescribe something which will take care of the imme-

*Merrell.

diate discomfort which of course is itching. This requires a proper evaluation of the presenting lesions, whether they are acute, subacute, or chronic. If the condition is acute and weeping it calls for a wet dressing. If subacute it may still do better under wet dressings rather than lotions or ointments. A safe axiom is that, when in doubt as to what to apply, prescribe a wet dressing. Sometimes the chronic eczemas become suddenly acute and should be treated as above. For the chronic patches, tar is valuable but should be applied in Lassar's paste, for starch bases are better tolerated than mineral bases such as vaseline. In the chronic eczemas x-ray is very valuable and is frequently the only useful treatment.

Desensitization should be attempted by the use of foreign proteins which sometimes give spectacular results. I like autohemotherapy, but caution its use in the seborrheic eczemas. Its place is in the erythematous, dry scaly eczemas. It does decrease the itching considerably at times. Spleen extract intramuscularly sometimes gives prompt relief of symptoms even more so than autohemotherapy. I do not believe in baths for eczemas. Their temporary relief of pruritis is offset by their damage later. The barbiturates should not be forgotten for their sedative effect. Bromides should be avoided as they sometimes have a tendency to cause pustulation in an eczematous area. On the other hand one must never forget that he might be overtreating an eczema. A noted dermatologist told me of an astounding cure he had brought about in a child whose anxious mother had been taking her to one dermatologist after another. Each had exhausted every skin test in an effort to discover an offending allergen. With each succeeding dermatologist the child grew steadily worse until fortunately she fell into the hands of the above doctor. He held a consultation to end all consultations and when the child was informed there would be no more skin testing it was cured.

CONGENITAL CYSTIC MALFORMATION OF THE LUNG

(Report of Two Cases)

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NUMEROUS European pathologists have described a condition of the lungs in which there are single or multiple cysts in one or more of the lobes of the lung. These may contain fluid, or in cases in which the infant had not breathed, a collapsed potential cyst. Other cases show a diffuse degeneration resulting in so-called honeycomb type of lung, cysts being distributed through the entire lung.

The first case reported in American literature was that of Koontz[1] in 1925. He reported the condition in an infant and at the same time reviewed the European literature finding a total of one hundred and eight cases, all having been studied at necropsy. This report has stimulated a search for the condition in America. During the past nine years approximately seventy cases have been reported, many of them diagnosed clinically, the diagnosis in several of these has been confirmed at necropsy and a few by surgery. Miller[2] in 1926 reported the first case diagnosed clinically. This report was followed shortly by reports from several American clinicians. Eloesser[3] reported two cases in 1927 and during the following year observed seven additional cases. Moorman[5], Wood[7], and Freedman[9] have recently reported several cases personally observed by themselves; this suggests a more common occurrence of the condition than usually suspected.

Mueller[4] discusses the histology in detail,

concluding that the cyst is most often formed by a sac-like dilatation or embryonic malformation at the termination of a bronchus, the sac contains a lining of cuboidal epithelium, supported by a network of fibrous tissue and at times bronchial muscle and cartilage. In a second group, typical cavernous lymphangiomata, with or without lymph fluid, were found. Still another, but much less frequent condition is present when a portion of the embryonic gut, usually esophagus, becomes isolated in the lung. Anspack and Wolman[5] have recently reported a case belonging to the second group, the lymph sac evacuating while the infant was under observation, the diagnosis was later confirmed at necropsy.

There is an approximately equal distribution between male and female, single cyst in one lobe and multiple cysts. Single cysts usually occur in an upper lobe or in each of the upper lobes. The diagnosis has been made in persons varying in age from the new born to the fifth decade of life.

Numerous theories have been suggested as to the origin of the cysts; however, there can be little doubt that those found in early infancy are a true congenital malformation. Once a cystic cavity has been formed, its behavior should be determined largely by mechanical and accidental influences, such as capsular strength, proximity of adjacent air passages, plasticity of the surrounding lung tissue, and the presence or absence of complicating respiratory infections, rather than by its embryogenesis or the histology of its lining.

The symptoms depend upon the extent or site of the lesion, and the complications, such as infection; rupture of the cyst, which occurs when the communicating bronchus is insufficient in diameter to permit a free exit of air or fluid that accumulates in the cyst. Several cases presented themselves in extreme dyspnea and shock, suggesting a pneumothorax. Most cases give a history of recurrent lung infection and attacks of dyspnea. Hemorrhage occurs less frequently. A few cases presented themselves because of chest pain and rapid fatigue.

The lesions most commonly met with that require differentiation are: (1) pneumothorax, (2) pulmonary abscess, (3) bulbous emphysema with areas of atelectasis as seen in infancy, (4) bronchiectasis, (5) interlobar effusion or empyema, (6) thoracic tumor or dermoid cyst, (7) eventration or diaphragmatic hernia, (8) echinococcus cyst.

The röentgenogram of a lung cyst containing air only is not difficult to diagnose, as it is usually circular or rectangular in outline surrounded by lung tissue and a lining membrane. An area with the normal lung markings absent, but with strands of tissue extending through the space suggests cystic disease. Cases in which there is a valve-like obstruction in the bronchus permitting air into the cyst in greater quantity than it can be absorbed or evacuated, will produce a condition suggesting in many respects, a pneumothorax. The mediastinum may be displaced; however, a small portion of lung can usually be visualized about the upper and lower margins of the cavity. This may not be depended upon too strongly since pleural adhesion bands may give a similar picture. Air may be released from the space and an injection made into the pleural sac, thereby differentiating the conditions when necessary.

Lesions containing fluid are less easily differentiated. A lung abscess is usually variable in size from one examination to another and as a rule, presents a surrounding infiltration; however, cases have presented themselves when the differentiation could not be made without an examination through a bronchoscope or with the aid of surgical measures. Aspiration of the fluid followed by the instillation of an opaque oil may aid in the diagnosis, outlining the cyst wall. Bulbous emphysema, as seen in infancy may on first examination, appear very similar. In this instance a second examination will usually reveal a shift in the position of the area of decreased density with a clearing of the areas of atelectasis. Bronchiectasis is found in the

lower lobes. Cystic disease of the lungs usually involves an upper lobe also, if present in the lower lobes. Primary lung tumors usually extend out from the hilus area and may cause an atelectasis of the corresponding lung tissue. Dermoid cysts occur in the mediastinum, usually in the upper or anterior portion and frequently evidence of calcified material can be visualized. An interlobar effusion is usually triangular in outline with its base at the periphery of the lung. Eventration of the diaphragm or a diaphragmatic hernia may appear very similar, although the indistinct outline of the diaphragm should lead one to suspect it, the air being in distended loops of the gut, and a study then made of the intestinal tract with the true nature of the lesion being determined. An echinococcus cyst can be accurately diagnosed by a complement fixation test; then too, the patient frequently shows an urticaria with associated eosinophilia.

Several forms of treatment have proven valuable. Eloesser and Harrington[5] have each reported cases in which a lobe was successfully removed, other cases have been benefitted by cauterization of the communicating bronchus with collapse of the cyst. Cauterization with collapse of the cyst wall has been followed by complete obliteration of the cyst wall in a case reported by Harrington. The treatment during infancy is less promising, since operative procedures such as can be tolerated by an adult with a more or less stable mediastinum cannot be tolerated by an infant with a readily collapsed mediastinum. Bronchoscopic drainage, followed by the instillation of iodized oil as in bronchiectasis, has been of value in selected cases. A number of cases have been relieved permanently by a single aspiration, this being followed by a permanent collapse of the sac. In cases simulating a spontaneous pneumothorax, aspiration of the air may prove a lifesaving procedure, the bronchus may be cauterized or the entire area of lung involved collapsed by a thoracotomy operation at a later date. Those patients presenting themselves with a so-called honeycomb lung have little to be offered them, except an explanation of the condition present, with advice as to how they should conduct their lives to prevent insofar as possible, fatigue and lung infections.

CASE REPORTS

The first case was referred to me by Dr. M. F. Petersen for a study of the chest. The patient was a male, twelve months of age, with a history of normal development until six months of age, at which time he developed a lung infection. Following this he had had recurrent attacks of chest colds, low grade fever and loss of appetite with an associated decrease in weight, although his weight at the time of examination was nineteen pounds.

FIG. 1. Solitary cyst of the right upper lobe.

A film of the chest (Fig. 1) showed an air containing cyst of the right upper lobe, occupying approximately one-half of the normal volume of that lobe. There is also an increase in fibrosis with slight infiltration extending out from the hilus areas, more marked on the right.

A diagnosis was made of congenital cystic disease of the lung, with an associated chronic lung infection. The second case was referred by the Salvation Army Hospital of Charleston; a female, aged

nine years, with a diagnosis of tuberculosis. She had a history of recurrent lung infection, cough with a moderate amount of sputum. No tubercle bacilli had been found in the sputum. A röentgenogram of the chest (Fig. II) showed a honeycomb appearance of the entire right lung; the left lung was

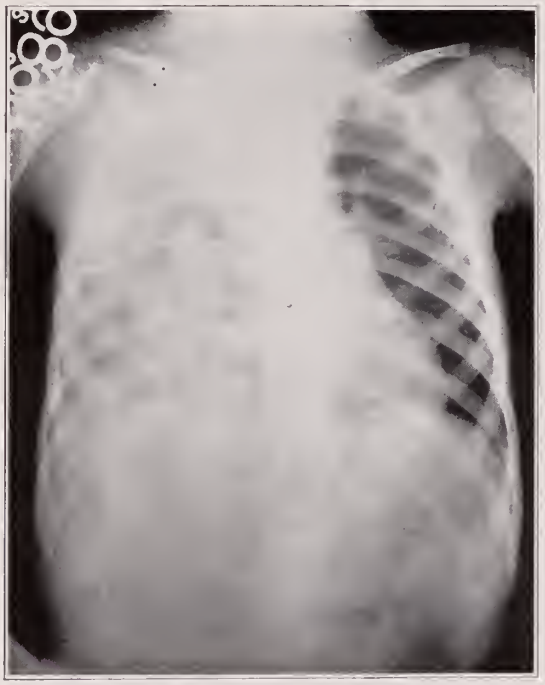

FIG. II. Multilocular cyst involving the entire right lung. The cyst walls cannot be visualized in the reproduction.

negative. A diagnosis of multilocular congenital cysts of the lung was made from the plate. The history of long duration, with the lack of involvement of the opposite lung with a tuberculous process would tend to confirm this diagnosis. The patient was a transient in the city so that a follow-up could not be made.

BIBLIOGRAPHY

1. Koontz, A. R.: *Congenital Cysts of the Lung*, Bulletin, Johns Hopkins Hospital, Vol. 37, p. 340-360 November, 1925.
2. Miller, R. T., Jr.: *Congenital Cystic Lung*. British J. Child. Dis., Vol. 21, p. 138-140, 1924.
3. Eloesser, L.: *Congenital Cystic Disease of the Lung*. S. Clin. North America, Vol. 8, p. 1361-1373, December, 1928.
4. Mueller, H.: *Augenborene Zystenbildingen der Lunge*. Handbuch. d Spec. Pathology Anat. und Hist., J. Springer, Berlin, 1928, Vol. III, p. 550.
5. Anspack and Wolman: Surg. Gyn. and Obst., March, 1933, Vol. 56, p. 635-645.
6. Harrington, S. W.: *Surgical Treatment of Mediastinal Tumors, Removal of Cystic Azygos Lobe from Posterior Mediastinum*. Ann. Surg., Vol. 96, p. 843-856, November, 1932.
7. Wood, H. G.: *Congenital Cystic Disease of the Lungs*. J. A. M. A., Sept. 15, 1934, Vol. 103, p. 815-821.
8. Moorman, L. J.: *Congenital Cystic Disease of the Lungs*. Ann. Int. Med., Vol. 7, p. 1523-1533, 1934.
9. Freedman, Eugene: *Congenital Cysts of the Lung*. Am. J. Roent. and Radium Therapy, January, 1936, Vol. 35, p. 44-52.

MOTHER'S FEARS

The new-born infant has fewer fears on the day he arrives than he ever will have again. He is born, however, with the mechanism for being afraid and for expressing fear. Modern psychologic research reveals the fact that the child has two ready-made fears, the fear of a loud noise and of the loss of support. Paul Martin discusses methods of "Helping the Child to Conquer Fear" in the May *Hygeia*.

A normal amount of normal fear is necessary to self preservation, but often a child is allowed to acquire too many or too intense fears, or fears which are unreasonable or foolish. The watchful mother, seeing her child lose his balance and fearful that he will be hurt, rushes to the young toddler and fusses over him until he stops crying. On another occasion, although actually unhurt the child cries vigorously, for not only has he experienced the falling sensation but he has been frightened by the cry of his mother who rushes to him.

As time goes on the child soon acquires most of the fears of his mother and father as well as those of his companions. The fear history of the average child repeats itself with slight deviation generation after generation. The fearful child becomes the fearful adult and pays throughout his life for faulty emotional training in his formative years.

One of the first mistakes made by the fond parents of the new-born infant is that of preventing the child from adjusting himself in his normal environment. They handle him as they would a delicate piece of china and are stricken with genuine fear each time he emits a cry for which they can find no adult explanation. On through the childhood years they watch carefully for the first signs of fear and try to take out of the baby's environment those things of which he tends to be afraid.

"BABIES IN BED"

Keeping an active baby in bed is a real problem in more than one household. Richmond Ross and Arline Ross explain in "Babies in Bed" in the May *Hygeia* how they handled the situation to the advantage of all concerned. In spite of protests and struggles their baby was made the victim of considerable experimenting.

THE DOCTOR ON THE WITNESS STAND*

By CLARENCE W. MEADOWS, *Attorney-at-Law*
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A DOCTOR, called as a witness, might easily ask one or all of the following questions: (1) "Just what am I allowed to tell about my patient's condition?" (2) "Just how should I tell it?", and (3) "What will I be paid for telling it?"

In answer to the first question, we are immediately concerned with those matters learned or conveyed to the doctor from and by his patient, commonly called "privileged communications."

The West Virginia Code provides that a physician or surgeon cannot testify without the consent of his patient concerning any communication made to him, which communication was necessary to enable the physician to prescribe and treat the case. Under this provision, the physician is prohibited from disclosing information acquired by him in any way during his attendance upon his patient in his professional care, which information was necessary to enable him to prescribe for the patient. It matters not whether such information is received by direct communication or acquired by the physician through his own observations or examination. In fact, information acquired by examination, after the patient has submitted himself to such, may as appropriately be said to be acquired from the patient as if the same had been orally communicated to the doctor. Even if the patient could not speak or his mental powers were so affected that he could not accurately state the nature of his disease, the astute medical observer would readily comprehend his condition, and the information thus acquired is, therefore, clearly within the scope and meaning of the statute. Accordingly, physicians have been compelled to testify only in those cases where the communication was made to them unnecessarily and not for the purpose of enabling them to perform their duties to their patients.

The question then arises as to what is meant by those communications which are necessary in order to treat the patient; what construction is to be placed upon the word "necessary." The tendency of the courts seems to be toward a liberal construction of this word, and a great number of cases hold that where the relationship of physician and patient has been established, there is a presumption that information communicated by or acquired in attending a patient was necessary for the treatment of the patient. Other cases, however, take the view that the burden is on the party objecting to the admission of the testimony of a physician to show that such information was necessary for the treatment of the patient. In other jurisdictions, the question as to whether or not the communications were necessary, is left to the sound discretion of the trial court. While in still other courts, the matter is left more or less to the testifying physician as to whether or not, in his opinion, the information sought to be elicited from him was such as was necessary for him to have in order to prescribe and treat the patient. There seems to be no settled rule or authority on this particular question in West Virginia, and he matter would more or less rest with the individual court trying the particular case.

As to the second question, "Just how should I tell it?", the answer is "simply." Some few physicians are wont to use highly technical terms and phrases when they are placed upon the witness stand. This sort of testimony, although perhaps necessary for the record in a case, should be elaborated upon and explained by the physician in common, ordinary, everyday language, as much as rea-

*Read before Raleigh County Medical Society, May 21, 1936.

sonably possible. The reason for this is apparent. Jurymen, as a rule, are men of average learning and intelligence, but are not generally, in any manner, highly educated and the use of simple language, which they can easily and readily understand, will immediately appeal to them, and permit them to clearly grasp the point the witness is attempting to make. After all, a story told simply and clearly is by far the most effective.

Last, but by no means least, the doctor, as every other professional man, becomes interested in his fee. At common law, witnesses were required to attend court without pay. However, statutes generally allow them compensation, as in West Virginia, requiring all persons to obey the subpoena of the court in both criminal and civil cases. Witnesses may be proceeded against for failing to appear and compelled to appear by attachment under rule; the only exception being where a witness in a civil case demands payment of his witness fee, together with his mileage, and is not paid therefor within a reasonable time. This compensation for witnesses is not intended to pay for their testimony in any sense of the word, but rather to make good to them the loss and expense consequent upon their leaving their homes and occupations to attend court. There is no provision in our statute whatever for special compensation for the witness called to give expert testimony in either civil or criminal cases. The duty of every witness is to attend as long as commanded and to testify to all material facts within his knowledge.

Apart from the statute, an expert witness may be compelled to testify as to matters of a professional opinion or matters about which he has gained special knowledge by reason of his professional training or experience without further compensation other than the fee of an ordinary witness. Therefore, as to facts within his knowledge, a physician or surgeon or other scientific or professional witness, stands upon an equality with other witnesses, and in performing such service, as every other citizen of the State performs, the physician may not demand any extra compensation. His time is claimed by the public as a tax paid by him to that system of law which protects his rights, as well as those of others.

However, a physician or surgeon cannot be required to make any examination or preliminary investigation so that he may be better able to give his opinion as an expert, unless he be especially compensated therefor, because such duties do not come within those of an ordinary witness. If the service required of the expert is such that he cannot be compelled to render it under the ordinary process of the court, the agreement of the one seeking the service to compensate the expert for it is valid and enforcible. It would, therefore, seem that where a physician or surgeon, at the request of a party to an action, whether it be the State or defendant in a criminal case, or the plaintiff or defendant in a civil trial, performs certain services in making investigations and examinations so that he might qualify himself as an expert witness in the party's behalf; or in preparing his testimony in connection with such investigation or ex-examination, he is entitled to be paid the reasonable value of the time and labor spent by him in so doing, as this does not come within the service which the law compels him to give as a witness for the statutory fee. In other words, routine matters which would come to his attention or knowledge during the course of his treatment of a patient, or within his general learning as a medical man, where it required no extra work or necessitated no further study of the science of medicine on his part, for such information, the physician or expert could be called into court under an ordinary subpoena and as a witness and citizen be required to divulge such information asked of him to the best of his ability. He would be entitled to extra compensation only when, by express or implied agreement between the parties, he would perform extra services or investigation looking forward to giving his testimony at the trial.

MENINGOCOCCUS MENINGITIS

Treatment of a Case With Meningococcus Antitoxin (Ferry) With Recovery.

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MENINGOCOCCUS meningitis is properly regarded as a condition of considerable gravity, regardless of the age of the patient. However, in early infancy the prognosis is exceptionally unsatisfactory under any accepted form of treatment. Dr. Archibald L. Hoyne of Chicago, in a personal communication, states that "the fatality rate for those under one year of age has usually varied from 50 per cent to 70 per cent or even higher."

We have recently encountered a case in an infant of only five months of age, in which there was the further complication of a frank bronchopneumonia. This case was treated specifically only with the recently developed meningococcus antitoxin (Ferry). The recovery, without complications, was so complete that we feel that this case warrants presentation.

Since the discovery of the meningococcus (Neisseria intracellularis) by Weichselbaum in 1887, and the development of an antiserum by Flexner and Jobling in 1907-1908, little progress was made in the further improvement of a specific biological therapeusis. The work of Gordon in 1920, and others later, showing the existence of several types of meningococci, led to the current practice of preparing polyvalent antiserums. These serums contain, however, apparently only opsonins and bactericidal and bacteriolytic antibodies.

As late as 1929, or even in later editions of medical and bacteriological texts, the meningococcus is definitely considered unable to elaborate a true toxin. Hence, no antitoxin, presumably, could be expected.

However, Ferry in 1931 demonstrated that under appropriate conditions of cultivation, the meningococcus developed toxins, and that animals treated with the toxic filtrates developed specific antitoxin capable of neutralizing the toxin. He showed further, that the usual meningococcus antiserum lacked this antitoxic property, and in a series of studies, laid the foundation for the development of a therapeutic agent which has been apparently established as of undoubted efficacy. The records of Hoyne[1] from Cook County Hospital, Chicago, amply support this statement. This antitoxin, however, has not as yet attained wide usage in general practice.

The following case offered an opportunity to test this antitoxin on an advanced case in an infant, complicated further with bronchopneumonia.

February 9, 1936: Roy S., a white male infant of five months of age entered the Monongalia County Hospital in a comatose state.

Illness originated in the home, with a coryza and high fever on February 5. On February 7, a definite bronchopneumonia was evident. On February 8, signs of meningeal involvement appeared, and on February 9, a definite meningitis had developed. The rectal temperature reached 104° F., and the patient was removed to the hospital at this time.

Physical examination on entry, revealed a well-developed and well-nourished infant, extremely ill and comatose. Opisthotonos was evident. The pupils reacted normally to light, but there was a marked strabismus of the left eye. The ear drums were normal; nose was normal; the posterior pharynx was injected, but tonsils were normal.

Râles were detected in both lungs. The heart sounds were clear in all areas, with no murmurs. The abdomen was markedly distended, but otherwise normal. There was considerable rigidity of both legs, with a positive bilateral Kernig's reflex.

A clinical diagnosis was made of bronchopneumonia and meningitis.

Immediately upon hospitalization a spinal puncture was made. Some 10 cc. of a thick turbid fluid, under slightly increased pressure, were withdrawn and 5000 units of meningococcus antitoxin (Ferry-Parke-Davis) were given intraspinally.

Hospital laboratory examination of the specimen showed a cell count of 21,900. Stains revealed chiefly polymorphonuclears, and many extracellular Gram-negative cocci. None were observed intracellular at this time. Inoculations of this fluid yielded a similar organism in pure culture.

This, and subsequent specimens were brought to the University Medical School for further study. Here blood agar plates yielded typical meningococcus colonies. Stains from these colonies showed typical meningococci, later identified as Type III.*

Upon this laboratory confirmation of a meningococcus meningitis, a second spinal puncture was made on February 10, and 5000 units more of antitoxin were administered intraspinally.

This second specimen showed a distinct reduction in turbidity, and the fluid flowed under normal pressure. However, the rectal temperature was 105° F., and the child was apparently unimproved.

Microscopic examination of this specimen showed many typical organisms both extracellular and intracellular. Phagocytosis was obviously active on this date. Inoculations to blood agar plates yielded many typical meningococcus colonies in pure culture.

February 11: Definite improvement was noted. Rectal temperature was 104.6° F. The strabismus was reduced. On this date 10,000 units of antitoxin were given intramuscularly. Further spinal punctures were considered inadvisable.

February 12: Further improvement was observed. Rectal temperature was 103° F. The general condition appeared fair, although there was an annoying gaseous distension. Again 10,000 units of antitoxin were given intramuscularly.

February 13: Condition appeared but little changed. The rectal temperature was still 103° F. The eyes had returned to normal. Another 10,000 units of antitoxin were administered intramuscularly.

February 14: The child showed definite improvement. Temperature was 101.6° F. Appetite was good. No antitoxin was given on this date.

February 15: The temperature returned to 103° F. The general condition remained about the same, and another intramuscular injection of 10,000 units of antitoxin was made.

*Through the courtesy of Dr. Sara E. Branham, of the National Institute of Health.

February 16: Improvement was obvious. The child displayed conscious reactivity. The temperature was 102° F., and a final intramuscular injection of 10,000 units of antitoxin was given.

This made in all, 10,000 units intraspinally and 50,000 units intramuscularly.

February 19: The temperature returned to 103° F. Many râles were noted over the entire chest, together with some coughing. The abdomen was still somewhat distended with gas.

February 22: The patient showed great improvement. The temperature was reduced to 100° F. Fewer râles were noted, and both the cough and the abdominal condition were improved.

February 25: Further improvement was evident, although the temperature rose to 102° F. Râles and cough were improved. Mental alertness was evidenced by the smile of the baby on entry of the physician.

February 27: The temperature fell to 99° F. The general condition was markedly improved. The baby laughed and "cooed" as a normal infant.

From this date onward, improvement was rapid. Râles and cough gradually diminished.

Nasal cultures were taken for release from isolation. On February 29 and March 1, cultures were positive for morphologically typical organisms. Cultures of March 5 and March 8 were negative, and the patient was released from isolation. On March 10 he was removed to the childrens' ward.

On March 14 all conditions were normal, and the baby was returned home on the thirty-fourth day of hospitalization.

No complications developed. All rigidity disappeared, and today, three months from onset, the baby is well and normal in every respect.

Summary: We have here the report of a case of clinical meningococcus meningitis, confirmed by laboratory culture and typing, in an infant of only five months of age, complicated further by a bronchopneumonia. Either condition, alone, would offer a poor statistical expectation at this age.

This case was treated, at a rather advanced state of infection, specifically with 60,000 units of meningococcus antitoxin (Ferry). Of this, 10,000 units were given intraspinally and 50,000 units intramuscularly. Gradual improvement followed, with complete recovery without complications.

Hoyne[1] considers that intraspinal administration of the antitoxin shows little, if any, advantage over the intravenous or intramuscular route; at least, that the repeated spinal punctures for this purpose alone may be more harmful than beneficial. However, where such practice is necessitated for withdrawing fluid to reduce pressure, the replacing of the fluid by antitoxin would appear justified.

We feel confident that this recovery was due largely, if not solely, to the administration of the antitoxin (Ferry), and believe that this biological is deserving of more widespread use in meningococcus meningitis.

This conclusion is supported by the studies of Hoyne[1] and others who have had the opportunity to apply the antitoxin to a considerable series of cases.

REFERENCES

1. Hoyne, A. L.: 1935, J. A. M. A. 104, 980

ALLERGIC HEADACHE

By ROBERT J. ARMBRECHT, B. S., M. D.
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In recent years the theory of specific sensitivity has been generally accepted. The study of a great number of conditions from the allergic viewpoint has brought light to many heretofore baffling medical problems. It has been shown that allergy is often, wholly or in part, responsible for the annoying symptom of headache in a certain group of patients. Allergic headache may affect an individual at short or long intervals; may last for short or long periods and may be mild or of the most severe type.

Headache may be a common manifestation in patients allergic in other ways. It is usually associated with respiratory allergy, with gastrointestinal allergy and with the pure migraine syndrome.

Individuals with respiratory or nasal hay fever often complain of headache. In the perennial cases the headache is more frequent while in patients with seasonal allergy, usually due to pollens, it is more severe but of shorter duration. In the perennial type the headaches are usually more severe during the winter months, due possibly to the colder weather and the constant change from a warm to a cold environment. The seasonal type seldom prevails beyond the first frost, when the weeds and grasses are through pollinating. This type of headache is part of the symptom-complex of the hay fever attack and may or may not be associated with gastric symptoms. Their severity may depend upon the degree of involvement. The headache is usually of a dull frontal type, extending into the sinus areas and the eyeballs. The production of this type of headache is thought to be due to the swelling and pressure of the nasal mucosa plus the low grade toxemia that is present. A low basal metabolic rate is sometimes found in allergic patients, which should be treated along with other specific methods of desensitization, which, if they relieve the hay fever will relieve the headaches.

Following the ingestion of certain foods, there are some persons who will inevitably develop a headache. It may not be very severe nor of long duration, although of frequent occurrence. This is often due to the fact that some of the more common foods are the greatest offenders. When the headache is mild the cause may never be found and the individual go on indefinitely, thinking the eyes, bowels or liver at fault. Often a person's own observation will lead him to stumble upon the one or more factors involved in his case and result in a cure as long as the offending food is no longer ingested. In this type of allergic reaction the individual is seldom incapacitated, although almost con-

stantly annoyed by this mild headache and occasional gastric upset.

The migraine syndrome has been known for centuries. Some of the early writers of the nineteenth century recognized a similarity between asthma, hay fever and migraine. Even today the migraine problem remains complex. While promising results have been obtained by modern allergists, food allergy does not explain all cases of migraine. Dietary control, based on allergic studies, does not relieve all symptoms. A patient who has suffered from severe sick headaches, and who has been studied from every medical and surgical viewpoint without results, should be studied from the allergic standpoint. In searching for the presence of allergy the family history is of great importance, as practically every case of allergic manifestation, whether asthma, hay fever or recurrent urticaria will reveal other cases in the family. Vaughan reports as high as 70 per cent of his migraine cases giving a positive history of other allergic manifestations in the family. There are several methods of study which may be pursued in these cases. First is the skin tests, which with standardized extracts of inhalants and foods give positive results in well over fifty per cent of the cases. In those in which they are of no value the food elimination diets and the food diary trial may be used. There is one laboratory method which has proven to be of great value in this study. It is called the leucopenic index of Vaughan. This test is based on the principle of hemoclastic crisis. In normal persons the ingestion of foods produces a mild leucocytosis. In patients with food allergy, the ingestion of foods to which the patient is sensitive produces a marked leucopenia. Vaughan believes this test to be over 90 per cent accurate.

It seems as though the more common foods are the more common offenders. Some of these are wheat, milk, eggs, chocolate, coffee, potatoes, beans, peas, fish, turnips, nuts, chicken and other less common offenders. As a rule more than one food will bring on attacks of migraine and often a patient is sensitive to a great number of foods. All of these must be eliminated from the diet and the results are worth the effort. Balyeat states in his text-book on allergis diseases: "From our findings we are led to believe that the exciting factor in migraine is a specific sensitivity to food, which can be found in the majority of cases, and the treatment based on such findings gives results that are well worthwhile." In attempting to give symptomatic relief to migraine patients, hundreds of drugs have been used with poor or indifferent results. Recently it has been shown that in some of these patients spectacular relief may be obtained by the use of ergotamine tartrate. This drug may be given orally or hypodermically. In the cases in which relief is obtained the headache ceases almost immediately and the attack is usually over. In a certain percentage of patients it does not relieve the attack when first used nor in future trials. Relief from this drug on several occasions aids in confirming the diagnosis of migraine. Its action is on the sympathetic nervous system. There are no ill effects, although at times transsitory symptoms of nausea and vomiting may appear. Patients may be taught to give themselves the drug hypodermically as in the use of insulin.

HEALTH GOAL

Today it is good form to be healthy. Two hundred years ago a robust physique was a thing of which no lady would have been guilty, R. N. Levinson points out in "The Days of Decorum" in the May *Hygeia*.

In the eighteenth century a vigorous body and a stable nervous system were considered fit for animals and the lower class of serving women, and a "Lady" was a lady in direct proportion to the delicacy of her constitution. The sickly heroines of sentimental novels of the period cultivated delicacy the way a modern young woman cultivates suntan. They were supposed to suffer from a number of vague and nameless ailments of a "genteel" nature, thought to enhance greatly the feminine charm.

REFERENCE

Balybat: *Allergic Diseases*. Cleveland Clinic Quarterly.

THE FOUNDERS' ESSAY*

By DONALD WATTS TUCKWILLER
Son of Dr. and Mrs. J. R. Tuckwiller
Fairmont, W. Va.

ABOUT sixty-five years ago a group of doctors in the northern part of West Virginia, who, realizing the benefits of meeting together and exchanging opinions on subjects connected with the different branches of the practice of medicine and surgery, decided to organize a State Medical Society.

As a first step in this direction this group of doctors sent out circulars to several of the doctors in the surrounding counties requesting their presence at a convention to be held at Fairmont, April 10, 1867, in the Methodist Protestant Temple.

DONALD TUCKWILLER

Dr. H. W. Brock of Morgantown, called the meeting to order and on his motion Dr. W. J. Bates, of Wheeling, was selected as temporary president and Dr. J. W. Ramsey, of Clarksburg, as secretary.

Twenty-two doctors answered to roll call and the one coming from the greatest distance was Dr. M. Campbell from Wood County. At that time travel in West Virginia was very slow and inconvenient and the counties in the southern part of the State were not represented.

Dr. James E. Reeves of Fairmont, chairman of the Committee on Arrangement, welcomed the doctors to the convention.

On the first day of the meeting the constitution and by-laws were written by Drs. Brock, Reeves, Hupp, Frissell, Dent, Lazzell, and Campbell. They were later proclaimed much too long and were shortened.

The first officers of the Society were elected as follows:

President, Dr. John Frissell, Wheeling; first vice president, Dr. Jesse Flowers, Mannington; second vice president, Dr. H. W. Mackey, Morgantown; third vice president, Dr. J. M. Lazzell, Fairmont; secretary, Dr. James E. Reeves, Fairmont; treasurer, Dr. John C. Hupp, Wheeling.

Committee of Publication: Dr. J. H. Brownfield, Fairmont; Dr. Henry J. Weisel, Wheeling; Dr. F. C. Shepherd, Bruceton.

Dr. H. W. Brock, Dr. M. Campbell and Dr. J. W. Ramsey were the first delegates to the eighteenth annual meeting of the American Medical Association which was held in Cincinnati on Tuesday, May 7, 1867.

So much interest was shown at the meeting in Fairmont that it was decided to hold a semi-annual meeting in Wheeling the first Wednesday in October, 1867.

At this meeting thirty-two doctors answered to roll call showing an increase of ten members. From this time on the attendance increased very rapidly until at this time we have a membership of about a thousand.

The programs carried out at these conventions have been of such a helpful nature that it has increased interest in the society. So this year, June 9, 1936, we are meeting again in Fairmont to honor the doctors who had the vision of what an organization like this would mean to the doctors in West Virginia.

*The winning essay in the Founders' Essay Contest conducted by the Woman's Auxiliary in connection with the dedication of the Founders' Monument at Rivesville on June 9, 1936.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Institutional Tuberculosis: The staff of the Minnesota State Sanatorium have carried on an investigation of the incidence of tuberculosis infection in the institutions under the direction of the State Board of Control. The study began September 1, 1934, when a program of tuberculin testing and x-raying all reactors, was inaugurated for both inmates and employees and has been continued since that time. Old tuberculin, 1 1000, was used, paper films employed with celluloid in doubtful cases, and one man was detailed from the sanatorium staff to make all the tests and read the reactions.

"The Minnesota State Board of Control, responsible for the care of State wards, interested itself in the survey to determine the incidence of tuberculous infection and disease as a preliminary step in the development of a logical control program. The investigation of tuberculosis, of both infection and disease, was carried out for the purpose of identifying those infected at the present, those showing definite evidence of parenchymal disease, and those who show the presence of tubercle bacilli in their sputum. It was, therefore, hoped that this survey would furnish information upon which the Board of Control might build its future tuberculosis program in Minnesota."

During the six years preceding the beginning of this project the institutional population had increased 20 per cent, while the tuberculous cases diagnosed increased over 100 per cent in the same period.

"Because of the intimate association in institutional life, exposure from unknown and unisolated positive-sputum cases must necessarily be greater than would occur from such cases in the average community. Such close association exists among all of the 15,994 inmates and 2,400 employees. Visiting friends and relatives, as well as parole cases leaving the institutions for home, increases the number of individuals exposed through contact beyond those associated with the cases in the institution.

"If the institution is a reservoir of infection, the many thousands of visitors associating with unknown inmate-cases each year only add to the necessity of protective measures being carried out. It would appear, from the incidence of tuberculosis as well as the deaths from this disease in state institutions, that these dependents form one of the reservoirs of infection in the state which should be corrected as part of the state's program of tuberculosis eradication among its citizens."

The number of inmates in state hospitals and asylums and schools for the feeble-minded and epileptic was 11,617, of which 82 per cent reacted positively to the tuberculin test. This appears to be excessive in a state with a low death rate from tuberculosis. Of the reactors 11.2 per cent showed evidence of pulmonary disease in their x-rays. Two and four-tenths per cent of the reactors had positive sputum, or just under two per cent of the total number of inmates.

Difficulty was encountered in collecting specimens of sputum because of the large number of deteriorated persons among the inmates. For this reason routine examination of stools for tubercle bacilli was also made. While as stated 2.4 per cent of reactors showed positive sputum, 8.8 per cent of this group carried the bacilli in their stools.

The examination was extended to include the 2,430 employees in the institutions studied. Of these 72 per cent reacted positively to the tuberculin test, 3.7 per cent were found on x-ray to have parenchymal tuberculosis and 0.66 per cent had bacilli in their sputum.

It is evident that the supply of tuberculosis cases in these institutions is derived from two sources, those active at the time of admission, those infected after becoming inmates. Thirty-three per cent of the deaths occurred one year or less following admission, suggesting the probability that the disease was active at the time they were committed. On the other hand fifty-one per cent of deaths among inmates over 24 years of age were in patients who had been in the institutions five years or more before the development of manifest tuberculosis. These may clearly be assumed to represent cases resulting from contact with existing and perhaps unrecognized cases within the hospital.

During the six years preceding the present study there had been a total of 538 deaths from tuberculosis. Of these 461 had no employment in connection with the work of the institution. Of the remainder, however, "fourteen did occupational therapy; seven worked in the laundry; forty-three were occupied in ward work; one did tailoring; six worked on the farm; one in the kitchen, three in the dining-room, and one in the bakery." Aside from the direct contacts between the more restricted inmates these circulating spreaders were certainly in a position to infect many others.

These observations lead to the inevitable conclusion that there is a public health problem in connection with institutional tuberculosis which requires

aggressive handling. "The study of the death reports points to the fact that protection of the inmate body in the future can be accomplished to a large extent by diagnosing the cases before or immediately following commitment, and providing the necessary isolation quarters for clinical cases to the end that their association with the uninfected can be prevented."

Obviously the first step in a program to protect a community against its institutional reservoirs of tuberculosis is the testing of all individuals entering either as inmates or employees and x-raying the positive reactors. At the same time segregation should be arranged for all those now in the institution who show evidence of parenchymal infection. It is suggested that in Minnesota the present medical staff could assume most of the additional work involved with the exception of the Mantoux testing and reading of x-ray plates. These should devolve as a continuous duty upon the Director of Tuberculosis of the State Board of Control.

In the careful study of about fifteen thousand individuals 245 were found to have demonstrable tubercle bacilli. These should be segregated and under the special care of staff members skilled in the care of actively infectious disease. In addition there were found to be 1,164 cases whose x-rays showed definite evidence of parenchymal involvement and who might be, or might become, actual spreaders of the disease. Provision for the isolation and special study of these cases is of similar importance in a comprehensive plan of control. Only by culling positive sputum cases and those showing parenchymal lesions on admission, at the same time discovering resident cases before they become infectious, can this public health menace to a community be eradicated.

The desirability of a wide application of the evident conclusions from this study requires emphasis. Further efforts to control tuberculosis must take the form of direct attack on specific foci of infection. In thousands of publicly maintained and doubtless in private institutions as well, opportunity for the occult spread of tuberculosis may exist. Pending further local studies to determine the conditions which prevail in other communities the program outlined may well be introduced widely as an approved procedure in preventive medicine.

A Study of the Incidence of Tuberculosis in State Institutions in Minnesota, Herbert A. Burns, M. D. Am. Rev. of Tuberc., June, 1936.

GOLDEN CLINIC PROGRAM

The second annual "Clinic Day Program" of the Golden Clinic of Davis Memorial Hospital, Elkins, will be held in the Elkins high school auditorium on July 16, 1936. Clinics in surgery, medicine, eye, ear, nose and throat and radiation therapy will be conducted from eight until 12 o'clock noon on the morning of July 16 at the Davis Memorial Hospital. The scientific program will open at 1 o'clock that afternoon and will close with the banquet address by Dr. Frank E. Adair of New York City that evening.

The afternoon program in the high school auditorium follows:

"Common Affections of the Digestive Tract," Dr. Moses Paulson, Baltimore.

"The Lymphomatous Diseases," Dr. Albert F. Craver, New York City.

"Renal Disorders in General Practice," Dr. Albert E. Goldstein, Baltimore.

"A Satisfactory Technique for the Correction of Inguinal Hernia," (colored motion picture produced by Golden Clinic), Drs. B. I. Golden and H. A. Conrad.

Immediately following the afternoon program, a banquet will be held for the visiting doctors at the Davis Memorial Presbyterian Church with Dr. R. J. Wilkinson of Huntington as toastmaster. The banquet address will be delivered by Dr. Frank E. Adair, New York City, on "Tumors of the Breast."

Dr. B. I. Golden, superintendent of the Davis Memorial Hospital, has announced that the meeting is open to the medical profession of West Virginia and that all physicians of the State are cordially invited to attend.

QUACK MEDICINES

A search through the files of the medicine frauds shows that for practically every known disease there has been "discovered" and put on the market a "cure." "Frauds that Flourish—Until Uncle Sam Takes a Hand" by S. R. Winters appears in the May *Hygeia.*

The antifat cure has always been a favorite. One medicine came in capsules the cost from $1.50 to $10, depending on which of the five strengths was desired. Testimony showed that among other things the capsules included thyroid extract, which can be extremely dangerous, and phenolphthalein, a laxative that is apt to irritate the alimentary tract.

PRESIDENT'S PAGE

May I take this opportunity, on behalf of the West Virginia State Medical Association, to extend heartiest congratulations to all those who contributed so willingly and wholeheartedly to the success of the Sixth-Ninth Annual Meeting at Fairmont. From personal observation and from the many comments I have heard since the meeting, it was one of the best and most successful in the history of our Association.

The Association's history was deeply interwoven in the pattern of the Fairmont session. The spirit of those pioneer physicians who formed our Association at Fairmont in 1867 seemed to be in evidence again in 1936. The present-day physicians of West Virginia are still pioneering along the frontiers of economic medicine with the same courage and the same insight and vision that characterized the spirit of our Association founders. Fitting indeed was the dedication of the Founders' Monument. Our hats are off to Dr. Hood, Dr. Henry, Dr. Maxwell and Dr. Reed for their wonderful services in connection with the monument dedication, and for handing down to a new generation the altruistic ideals that were born with our Association in 1867.

Personally I wish to express my deep appreciation to the Marion County Medical Society, to the Woman's Auxiliary, to the City of Fairmont, and to all other groups and individuals who contributed so much to the success of the meeting over which I presided. It shall forever remain the crowning event of my modest career in medicine.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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NEW ASSOCIATION OFFICERS

Congratulations and best wishes to Dr. William S. Fulton of Wheeling, our new Association president who will assume the duties of office next January first. His unanimous election to the highest office within the gift of the Association is a fitting tribute to his popularity and a recognition of his

DR. W. S. FULTON, *President-Elect*

courage and ability. Dr. Fulton is well equipped to carry on the Association's work when the reins are turned over to him by our present capable and genial president, Dr. Charles G. Morgan of Moundsville.

In addition to Dr. Fulton, the new official family of the Association elected at the Fairmont meeting is made up as follows:

DR. C. G. MORGAN, *President*

First vice president, Dr. G. R. Miller, Fairview; second vice president, Dr. F. C. Hodges, Huntington; treasurer, Dr. T. M. Barber, Charleston; first district councillor, Dr. Phillip Johnson, Fairmont; second district councillor, Dr. W. G. Harper, Elkins; third district councillor, Dr. B. S. Brake, Clarksburg; fourth district councillor, Dr. Welch England, Parkersburg; fifth district councillor, Dr. R. V. Shanklin, Gary; sixth district councillor, Dr. R. K. Buford, Charleston; scientific committee chairman, Dr. W. R. Laird, Montgomery; scientific committee members, Dr. W. W. Point, Charleston; Dr. J. P. McMullen, Wellsburg; A. M. A. delegate, Dr. Walter E. Vest, Huntington; A. M. A. alternate, Dr. W. P. Black, Charleston.

A study of the above list will provide com-

forting assurance that the Association will be in capable hands in 1937. Without exception, those who were selected to guide the destiny of the Association next year are all men who have given many years of service to the organized medical profession and who, because of that service, are familiar with our present-day problems. With Dr. Fulton at the helm, and with such a capable group of officers and councillors, the Association may look forward to another year of achievement in 1937.

The Fairmont meeting, one of the most successful in the history of our Association, was characterized by a spirit of harmony and understanding that should mean much to the medical profession of West Virginia. Our host city next year is Clarksburg, where we may expect to continue to go forward toward an ever brighter future outlook.

POSTGRADUATE CONFERENCES FOR WEST VIRGINIA

From time to time in recent months the JOURNAL has called attention to the possibility of securing federal funds with which to put on postgraduate "refresher" courses for West Virginia physicians. Through the cooperation of our Association committees on Maternal and Child Welfare and the State Health Department, sufficient funds have now been secured for a series of postgraduate clinical conferences in pediatrics and child hygiene and the first conference started at Romney on June 29. Five additional conferences have already been scheduled for northern West Virginia.

The postgraduate conferences for the northern section will be conducted by Dr. George M. Lyon of Huntington, who has conducted similar conferences in Virginia and is well qualified by training and experience for this type of work. The various courses have been so arranged to be of greatest interest to the general practitioner of medicine. There will be no fees for the courses and the work will be open not only to the members of the various county societies but to all licensed physicians in the areas covered.

Details and arrangements for the conferences are being taken up with the county societies in the areas to be served. The Association has requested the local societies to take charge of and sponsor the conferences and to invite non-members as well as members to attend.

The complete schedule of the conferences for northern West Virginia which have already been arranged is as follows:

Romney.....June 29 to July 3
Lewisburg.....July 6 to July 10
Parkersburg....July 14-16-21-23 and 28
Wheeling.....August 4-11-13-18 and 20
Elkins.....August 24 to August 28
Morgantown, Fairmont and Clarksburg.....August 31 to September 4

The introduction of this type of postgraduate conference in West Virginia should be of great value to the individual practitioners of medicine. If the conferences are successful, it is understood that similar conferences in obstetrics will be held in 1937 and that courses especially designed for the general practice of medicine will be given in 1938.

SOCIAL SECURITY IN W. VA.

The Public Welfare Act of West Virginia, providing social security for the indigent, was enacted into law by the State Legislature on June 20, 1936. We wish to outline herewith the outstanding provisions of the bill, particularly those provisions which relate to the practice of medicine.

Unquestionably the most interesting provision of the bill so far as the medical profession is concerned is to be found in Article IX, providing for physical rehabilitation of physically handicapped adults. This section provides that indigent persons who are eligible for relief and who are not able to secure gainful employment because of some remedial physical handicap may be rehabilitated and the necessary medical, surgical and hospital attention provided by the new Department of Public Assistance.

Inclusion of the adult physical rehabilitation section in the Public Welfare Act resulted from the joint experiment of the West Virginia Relief Administration and the West Virginia State Medical Association in this field last fall. A total of 120 physically handicapped relief clients were rehabilitated in October and November, 1935, at an average cost of $115 per patient. At the present time, 99 of these men are now back in gainful employment. Statistics, resulting from this experiment, were presented to the legislature to show that the State would realize approximately 1800 per cent over a 10 year period on its original investment for each successful rehabilitation case.

The physical rehabilitation program was not included in the public welfare act when it was originally introduced at the special session of the legislature. However an amendment was prepared in the Senate bill. This amendment was accepted on the third day of the special session and was later included in the house bill and accepted by that body. A fund of from $150,000 to $200,000 per year will be set aside for the physical rehabilitation project.

A second feature of the bill, which was also put in as an amendment after the original act was drafted, pertains to the appointment of the advisory orthopedic board to direct the crippled children's program. Heretofore, under the former setup, the director of the Department of Public Welfare was authorized to appoint an advisory orthopedic board consisting of three members. The same provision was made in the new public welfare act. The amendment, which was incorporated in the act, now provides that the advisory board shall be appointed by the director "from a list submitted by the West Virginia State Medical Association."

Under Article VI of the new public welfare act, provision is made for medical and surgical care for indigent persons both in their homes and in hospitals and other institutions. Programs for this type of "medical relief" may be set up independently in each county. Hence it behooves each county society to work with its County Public Assistance Council and its county director to see that such programs include free choice of physician and that physicians rendering service to relief clients shall be paid on a regular fee basis for actual work done. The Association's Committee on Medical Relief will probably be called upon to work out a uniform fee schedule for the entire State, but the actual operation of this type of "medical relief" will be the problem of each individual county.

The general provisions of the new public welfare act provide for a "State Department of Public Assistance" to replace the old Public Welfare Department. A "State Advisory Board" of five members and a "State Director of Public Assistance" will be appointed by the Governor to direct the public assistance program. In each county there will be a "County Director of Public Assistance" and a "County Public Assistance Council" of five members. The public assistance council shall consist of the president of the county court and four other members to be appointed by the Governor upon the recommendation of the State Advisory Board. The county director will be appointed by the County Council from a list of persons certified by the State Advisory Board as qualified to perform the duties of that office.

Other sections of the new public welfare act provide for public assistance to aged persons, blind persons, crippled children and dependent children.

Considered from all its various angles, we feel that the medical profession will have nothing to fear from the new public welfare act if the various county medical societies will use their knowledge and influence in guiding the medical programs in their respective counties. With proper guidance of the medical provisions of the new act, in both county and State activities, the new law should be of considerable benefit to the medical profession.

CONVENTION TRANSACTIONS

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Sixth-Ninth Annual Meeting, West Virginia State Medical Association

COUNCIL MEETING

June 8, 1936

The Council of the West Virginia State Medical Association met in Room 324 at the Fairmont Hotel, Fairmont, West Virginia, at 2:30 o'clock on Monday afternoon, June 8, 1936. Those present were: Doctors R. H. Walker, chairman; Roy Ben Miller, R. J. Reed, Jr., W. G. Harper, B. C. John, W. T. Gocke, James McClung, W. R. Goff, B. S. Clements, F. E. Brammer, G. G. Irwin, Ralph Hogshead, C. R. Morgan, T. M. Barber, and Mr. Joe W. Savage. Others present included Doctors James R. Bloss, C. A. Ray, W. E. Vest, W. R. Hughey and R. V. Shanklin.

The meeting was called to order by Dr. Walker and minutes of the last meeting were read and approved.

The report of the executive secretary was read by Mr. Savage and was accepted on the motion of Dr. G. G. Irwin.

The report of the treasurer was read by Dr. Barber and accepted on motion of Dr. G. G. Irwin.

The report of the Publication Committee was presented by Dr. Bloss and accepted on motion of Dr. G. G. Irwin.

The question of reciprocity relations with other states was discussed at considerable length after which it was moved by Dr. Brammer that the Council recommend to the Public Health Council of West Virginia that a thorough investigation be made of all applicants for reciprocity in this State. This motion was seconded and carried.

Dr. W. R. Hughey, chairman of the Committee on Insurance, reported on a prospective sickness insurance plan of the United States Coal & Coke Company. The plan as outlined by Dr. Hughey was a variation of the "list" system which included free choice of physician and free choice of hospital, with both physician and hospital being paid only for actual work done.

Dr. R. V. Shanklin of Gary, medical director of the United States Coal and Coke Company was recognized and explained the plan in more detail. Various questions were asked, following which it was decided to refer the matter to a special committee consisting of Doctors Irwin, Reed and Goff, said committee to report back at a special meeting of the Council to be held at ten o'clock on Wednesday morning, June 10, 1936.

On motion of Dr. J. R. McClung, duly seconded, the following doctors were elected to honorary membership in the Association: W. F. Dailey, Terra Alta; M. H. Proudfoot, Terra Alta; E. H. Campbell, Alderson; E. M. Hamilton, Belington; A. P. Butt, Sr., Elkins; C. W. Rexroad, Harrisville; S. A. Daniel, Welch; W. H. McCauley, Sutton; J. W. DeVebre, Ronceverte.

On motion of Dr. Reed, seconded by Dr. Goff, the salary of Mr. Joe W. Savage, executive secretary, was increased from $375 to $400 per month.

Dr. John called attention to Section 16 of Chapter XX of the Official Code of West Virginia relating to the violation of health laws wherein it is stated that the Public Health Council or State Health Commissioner *may* make complaints regarding health law violations. Dr. John desired that the law be changed from *may* to *shall*. On motion of Dr. Irwin the Council voted to refer this to the Association's Legislative Committee.

Dr. John then presented a petition signed by a number of members of the Association requesting a special section on anesthesia. He brought up this matter only for the attention of the Council and stated that it would be presented to the House of Delegates of the Association.

Dr. Hogshead called attention to the action of the Council at its December, 1935 meeting at which time the Association attorney was authorized to bring suit against some coal company employing a salaried doctor and practicing medicine without a State license. At the request of Dr. Walker, Mr. Savage reported on what had been done along this line. The Council desired that the Association attorney continue on the lookout for a suitable case and to bring suit if such a case could be found.

Mr. Savage presented the petition of the Boone County Medical Society for a charter as a component society of the Association. On motion of Dr. Irwin, seconded by Dr. John, the charter was granted.

Attention was called to the work of the Crippled Children's Division of the State Department of Public Welfare in its program of diagnostic clinics distributed equitably among the approved orthopedic surgeons of West Virginia. On motion of Dr. Irwin seconded by Dr. Brammer, this clinic work of the Crippled Children's Division was unanimously approved.

There being no further business to come before the meeting the Council adjourned to meet at ten o'clock on Wednesday morning, June 10, 1936.

June 10, 1936

The Council of the West Virginia State Medical Association met in Room 311 in the Fairmont Hotel, Fairmont, W. Va., at 10 o'clock, June 10, 1936, Dr. Walker presiding. Those present were: Doctors Walker, Goff, McClung, Brammer, Hogshead, Miller, Harper, Clements, Gocke, Barber, Morgan and Mr. Joe W. Savage. Others present were: Doctors Bloss, Shanklin, Vest.

Dr. Bloss was recognized and reviewed the history and work of the Publication Committee of the WEST VIRGINIA MEDICAL JOURNAL. Dr. Bloss stated that the members of the present Publication Committee desired to drop from the committee one by one and requested that the present committee be reelected so that one member could drop off each year.

Mr. Savage presented the claim of Dr. O. H. Fulcher in the amount of $100 resulting from a malpractice suit brought against him by one Frazier. Dr. Fulcher's claim was based on the employment of an ex-state supreme court judge to assist in defending the appeal of the plaintiff to the State Supreme Court. This claim was allowed on motion of Dr. Gocke, seconded by Dr. Clements.

On motion of Dr. Gocke, seconded by Dr. Barber, the Association was authorized to take care of the expense for shrubs and evergreens planted at the Founders' Monument at Rivesville; said expense not to exceed $54.00.

Dr. Irwin then presented the following report as chairman of the special committee to consider the sickness insurance plan of the United States Coal and Coke Company:

"The proposed hospital agreement with the employees of the U. S. Coal and Coke Company, was examined carefully by the committee and is approved with the following provisions:—

"The check-off shall show to the miner that a specified sum is deducted for hospitalization and another specified sum is deducted for medical and/or surgical care for the patient receiving said hospital care.

"In the main, the agreement conforms to the conditions set forth by the A. M. A. It is pointed out that the Board of Trustees is largely composed of physicians serving in the dual capacity of physician and hospital representative.

"The committee wishes it understood that its approval is contingent upon the plan being applied in regions where list practice prevails.

"The application of this plan to industrial centers is not recommended without further study, because it appears possible that its application in such places might be damaging to the private practice of medicine.

"The committee desires to congratulate Dr. Shanklin and the U. S. Coal and Coke Company for their efforts to improve the cause of mine medical practice."

Dr. Irwin moved the adoption of the report. After considerable discussion by all of the councillors in attendance, Dr. Harper moved that the report be adopted and that the plan of the U. S. Coal and Coke Company be given temporary approval for a period of one year. This motion was seconded and carried.

Dr. Vest was recognized and requested the Council to appropriate a sum not to exceed $25.00 to defray the expenses incident to the exhibit of the Cabell County School Health Program for the Fairmont meeting. On motion of Dr. Brammer, duly seconded, the Council voted to defray this expense.

At the suggestion of Dr. Walker, the Council voted a grant not to exceed $300 to defray necessary expenses of organization work of the Woman's Auxiliary to the West Virginia State Medical Association during the ensuing year.

The election of the Publication Committee of the WEST VIRGINIA MEDICAL JOURNAL was then held and the following were elected:

Dr. James R. Bloss, one year term; Dr. C. A. Ray, two year term; Dr. C. R. Ogden, three year term; Dr. J. H. Anderson, four year term; Dr. W. E. Vest, five year term.

On motion of Dr. Goff, duly seconded, the following resolution was adopted and referred to the Committee on Legislation:

WHEREAS, The "Uniform Narcotic Drug Act"

which was passed by the legislature on March 8, 1935, and became effective ninety days from passage without the approval of the Governor, gives the State Board of Pharmacy the right to regulate the sale at retail or dispense at retail to a person except upon the written prescription of a physician, dentist or veterinarian, malonyl urea (barbituric acid), as such, or diethyl-malonyl urea, as such, or any sodium or potassium salt or either of them, under whatever name they may be designated, and

WHEREAS, The State Board of Pharmacy has failed to regulate the sale of malonyl urea or any of its salts, derivatives, mixtures or preparations, except barbital and diethyl barbituric acid or the same under any trade name, and the said board of pharmacy permits the pharmacist to refill the prescriptions as often as he may elect unless the physician writes on the face of said prescription "not to be renewed" or words to that effect, and

WHEREAS, The privilege of individuals to purchase the above named compounds is grossly abused and the said purchase is detrimental to the public welfare.

Therefore, Be It Resolved, That the West Virginia State Medical Association favors strict regulations in the sale of said compounds, under whatever name they may be designated and should be sold only on prescription by a registered physician, dentist, or veterinarian and should not be refilled, and

Be It Further Resolved, That the following words "As defined by regulations of the State Board of Pharmacy" should be depleted or eliminated from lines seven and eight, Section 21, Chapter 46 of the law passed March 8, 1935.

There being no further business to come before the Council the meeting adjourned at 11:50 o'clock a. m.

Signed, JOE W. SAVAGE,
Executive Secretary.

HOUSE OF DELEGATES

Monday Evening, June 8, 1936

The meeting of the House of Delegates of the West Virginia State Medical Association was held in the Fairmont Hotel, Fairmont, West Virginia, on June 8, 1936. The meeting was called to order by Dr. C. G. Morgan, president, at 8:15 p. m. Minutes of the previous meeting were approved as printed in the WEST VIRGINIA MEDICAL JOURNAL.

The following reports (published elsewhere in these convention transactions) were submitted and accepted:

Report of the Executive Secretary.
Report of the Treasurer.
Committee on Necrology.
Committee on Workmans' Compensation.
Committee on Medical Relief.
Committee on Publication.
Committee on Scientific Work.
Committee on Insurance.
Committee on Maternal Welfare.
Committee on Child Welfare.
Committee on Cancer.
Committee on the Founders' Monument.

The following resolution was presented on behalf of the Committee on Constitutional Revision by Dr. R. K. Buford and was received for action at the 1937 Association meeting:

"*Be It Resolved,* That Section 1 of Article V of the Constitution of the West Virginia State Medical Association which now reads:

" 'SECTION 1. The House of Delegates shall be the legislative and business body of the Association and shall consist of (1) delegates elected by the component county societies; (2) the Councillors; (3) all ex-presidents; and (4) ex-officio the president and treasurer of this Association.'

"Be hereby amended to read as follows:

" 'SECTION 1. The House of Delegates shall be the legislative and business body of the Association and shall consist of (1) delegates elected by the component county societies; (2) all ex-presidents; and (3) ex-officio the president, the two vice-presidents and the treasurer of this Association. The councillors shall attend the meetings of the House of Delegates and may participate in all discussions but shall have no vote.' "

Dr. Walter E. Vest, on behalf of the Committee for Revision of the Constitution and By-laws, then offered a number of amendments to the Association By-laws for action of the House of Delegates on June 9, 1936. (See minutes of June 9 for complete amendments.)

Dr. C. B. Wylie, on behalf of the Monongalia County Medical Society, called attention to Section 1270 (6) of the West Virginia Code reading as follows: "The Commissioner of Health or any member of the Public Health Council may make complaint and cause proceedings to be instituted against any person or persons or corporations for a violation of any of the health laws of this State, without the sanction of the prosecuting attorney of the county in which proceedings are instituted, if said officer fail or refuse to discharge his duty, and

in no such cases shall they be required to give security for costs."

Dr. Wylie requested that an effort be made to change this law from "may" to "shall" in the first sentence. On motion of Dr. J. H. Anderson, this matter was referred to the legislative committee.

Dr. J. L. Blanton on behalf of the Marion County Medical Society presented a resolution calling for compulsory immunization against diphtheria and compulsory vaccination against smallpox of all children before admission to the public schools. Dr. Blanton moved the adoption of the resolution, which was duly seconded and carried.

Dr. E. F. Heiskell presented a petition signed by five past presidents and 58 members of the Association requesting the formation of a special section devoted to anesthesia, and moved that such a section be established. The motion was seconded by Dr. G. R. Maxwell.

Dr. G. R. Maxwell presented a resolution requesting the Association to endorse the efforts of the West Virginia Board of Control to obtain additional bed capacity at Pinecrest and Denmar Tuberculosis Sanatoria through federal aid. He moved the adoption of the resolution which was seconded by Dr. W. E. Vest and carried.

Dr. E. F. Heiskell presented a proposed bill for the West Virginia Legislature relating to claims of physicians, hospitals and nurses against injured persons and amending Section 14, Chapter 10, Article 44, of the Official Code of West Virginia. On motion of Dr. A. H. Hoge, this matter was referred to the Legislative Committee.

There being no further business to come before the House of Delegates, the meeting adjourned at 11 p. m.

June 9, 1936

The House of Delegates met in the Fairmont Hotel, Fairmont, West Virginia, on June 9, 1936, and the meeting was called to order by President Morgan at 9:30 p. m. Following the roll call, the first order of business was the election of officers, with the following results:

President, Dr. W. S. Fulton, Wheeling; first vice president, Dr. G. R. Miller, Fairview; second vice president, Dr. F. C. Hodges, Huntington; treasurer, Dr. T. M. Barber, Charleston; first district councillor, Dr. Phillip Johnson, Fairmont; second district councillor, Dr. W. G. Harper, Elkins; third district councillor, Dr. B. S. Brake, Clarksburg; fourth district councillor, Dr. Welch England, Parkersburg; fifth district councillor, Dr. R. V. Shanklin, Gary; sixth district councillor, Dr. R. K. Buford, Charleston.

Committee on Scientific Work: Dr. W. R. Laird, Montgomery, chairman; Dr. W. W. Point, Charleston; Dr. J. P. McMullen, Wellsburg.

A. M. A. Delegate, Dr. Walter E. Vest, Huntington; A. M. A. Alternate, Dr. W. P. Black, Charleston. 1937 meeting place—Clarksburg.

Dr. Paul Revercomb, Charleston, then submitted the following report for the Committee on the President's Address:

Mr. Chairman, Members of the Association:

Your committee on the President's Address wishes to report as follows: In the words of our vice president we feel that President Morgan has given an exhaustive and comprehensive review of the medical problems which have confronted our Association in recent years. Furthermore, we feel that he has made many worthwhile recommendations in respect to certain particular issues. We heartily endorse the emphatic stand he has taken against any general form of state medicine and believe that we cannot emphasize too strongly the desirability of having our keenest medical minds participate in legislative programs pertaining to our profession.

The appalling scarcity of hospital facilities for the victims of tuberculosis in our State has been called to our attention most emphatically, and we hope this information will reach the attention of all public-spirited citizens. We feel, as President Morgan, that the facilities of the miners' hospitals could be most advantageously used toward the solution of this problem, since they now seem to have outlived their usefulness otherwise.

Lastly, we most heartily endorse President Morgan's words of praise for the work of the State Health Department and the Committees on Maternal and Child Welfare.

This report is respectfully submitted by your committee, Dr. R. H. Edwards, Dr. Paul Revercomb, and Dr. D. A. MacGregor.

This report was accepted on motion of Dr. Claude Smith.

Dr. Walter E. Vest then presented the following amendments to the By-laws of the Association:

"*Be It Resolved,* That Section 2, Chapter VI, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 2. The vice presidents shall assist the president in the discharge of his duties. In the

event of the president's death, resignation or removal, the Council shall select one of the vice presidents to succeed him.'

"Be hereby amended, to read as follows:

" 'SECTION 2. The vice presidents shall assist the president in the discharge of his duties. In the event of the death, resignation or removal of the president, the first vice president shall succeed him and in the event of his incapacity the first vice president shall act in his stead." '

IV

"*Be It Resolved,* That Section 1 of Chapter VII of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 1. The Council shall meet on the day preceding the annual session and daily during the session and at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall meet on the last day of the annual session of the Association to organize and outline work for the ensuing year. It shall elect a chairman and a clerk, who, in the absence of the executive secretary of the Association, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates.'

"Be hereby amended, to read as follows:

" 'SECTION 1. The Council shall meet on the day preceding the annual session and at such other times as necessity may require, subject to the call of the chairman or on petition of five councillors. It shall, through its chairman, make an annual report to the House of Delegates.' "

V

"*Be It Resolved,* That Section 3 of Chapter IX of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 3. Charters shall be issued only on approval of the Council or House of Delegates and shall be signed by the president and secretary of this Association. The Council or the House of Delegates shall have authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.'

"Be hereby amended, to read as follows:

" 'SECTION 3. Charters shall be issued only on the approval of the House of Delegates and shall be signed by the president and secretary of this Association. The House of Delegates shall have authority, after a hearing, to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws, but the component society affected, or any member of this Association, shall have the right of appeal to the Council, and its decision shall be final.' "

IV

"*Be It Resolved,* That Section 2 of Chapter X of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 2. No address or paper before the Association *except those of the president and orators shall* occupy more than twenty minutes in its delivery, and no member shall speak longer than five minutes, nor more than once on any subject, except by unanimous consent.'

"Be hereby amended, to read as follows:

" 'SECTION 2. No address or paper before the Association, *except those of the president, the orators and the invited guests,* shall occupy more than twenty minutes in its delivery, and no member shall speak longer than five minutes, nor more than once, on any subject, except by unanimous consent.' "

III

"*Be It Resolved,* That Section 2, Chapter 1, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 2. No person who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association, nor shall he (or she) be permitted to take any part in any of its proceedings until he (or she) has been relieved of such disability.'

"Be hereby amended, to read as follows:

" 'SECTION 2. No person who is under sentence of suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association, nor shall he (or she) be permitted to take any part in any of the proceedings until he (or she) has been relieved of such disability, nor shall such member under sentence of suspension or expulsion from one component society be eligible for election to membership in any other component society in this Association until sixty days shall have elapsed after the component society from which he (or she) was expelled or suspended has been notified in writing by the secretary of the component society

before which application for such election is pending, and then only after approval of such election by the Council of this Association.' "

IV

"*Be It Resolved,* That Section 5, Chapter 1, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 5. *Honorary Members.* All physicians who have become incapacitated, due to age or otherwise, that are regularly elected honorary members of their local medical society, may become honorary members of the West Virginia State Medical Association without being required to pay the annual membership fee, upon request of his county society. Any member who has attained the age of sixty-five (65) years and who has been a member in good standing of this Association for fifteen (15) consecutive years prior to his sixty-fifth birthday, on request of his county society may be elected an honorary member of this Association.'

"Be hereby amended, to read as follows:

" 'SECTION 5. Any physician who has become incapacitated, due to age or otherwise, who is a regularly elected honorary member of his (or her) local medical society, may, upon the request of his (or her) county society, and election by Council, become an honorary member of the West Virginia State Medical Association without being required to pay the annual membership fee. Any member of this Association who has attained the age of sixty-five (65) years and who has been a member in good standing for fifteen (15) consecutive years prior to his sixty-fifth birthday, upon request of his (or her) component society, may be elected an honorary member of this Association. Honorary members shall have the privilege of the floor in any open session but not the right to vote nor to hold any office except committee membership which must be approved by a two-thirds vote of the House of Delegates.' "

V

"*Be It Resolved,* That Section 1, Chapter VIII, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 1. The standing committees shall be as follows:

A Committee on Scientific Work,
A Committee on Professional Relations,
A Committee on Publications,
A Committee on Medical Education,
A Committee on Necrology,
A Committee on Arrangements,

and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.'

"Be hereby amended, to read as follows:

" 'SECTION 1. The standing committees shall be as follows:

A Committee on Scientific Work,
A Committee on Professional Relations,
A Committee on Publications,
A Committee on Medical Education,
A Committee on Necrology,
A Committee on Arrangements,
A Committee on Maternal Welfare,
A Committee on Child Welfare,

and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.' "

"*Be It Resolved,* That Section 2, Chapter VIII, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 2. The Committee on Scientific Work shall consist of three members, from which a scientific secretary shall be chosen, and shall determine the character and scope of the scientific proceedings of the Association for each session, subject to the instructions of the House of Delegates. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers and discussions shall be presented.'

"Be hereby amended, to read as follows:

" 'SECTION 2. The Committee on Scientific Work shall consist of three members who shall be nominated by the president-elect and elected by the House of Delegates. The Committee shall choose one of its members as secretary and shall determine the character and scope of the scientific proceedings of the Association for each session, subject to the instructions of the House of Delegates. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers and discussions shall be presented.' "

VII

"*Be It Resolved,* That Section 6, Chapter VIII, of the By-Laws of the West Virginia State Medical Association which now reads:

" 'SECTION 6. The Committee on Publications shall have charge and direction of the publishing of

THE WEST VIRGINIA MEDICAL JOURNAL, and the members thereof shall consist of the chairman, who shall be editor, and four members, who shall be associate editors. The executive secretary shall be ex-officio secretary and business manager, in charge of advertising. Members of this committee shall be selected by the Council, and the Council shall have the power to fill any vacancies that may occur. This committee shall have the power to receive subscriptions, collect past due accounts, and otherwise carry on the business of publishing the JOURNAL during each calendar year. Any funds accruing from the publishing of the JOURNAL at the end of each calendar year shall be apportioned to the direction of the Council. This committee shall have sole jurisdiction over the scientific material, and a majority decision on any question shall be binding. The committee shall empower the secretary-manager to incur such expenses as are deemed necessary. The secretary-manager shall have due power to sign advertising contracts. He shall also have the power to collect past due accounts.'

"Be hereby amended, to read as follows:

" 'SECTION 6. The Committee on Publications shall have charge and direction of the publishing of THE WEST VIRGINIA MEDICAL JOURNAL and such other publications as may, from time to time, be deemed in the interest of the Association, and the members thereof shall select a chairman, who shall be editor, and four members, who shall be associate editors. The executive secretary shall be ex-officio secretary and business manager in charge of advertising. Members of this committee shall be selected by the Council and the Council shall have the power to fill any vacancies that may occur. At the first selection of this committee following the adoption of this resolution, one member shall be chosen for a one-year term; one member for a two-year term; one member for a three-year term; one member for a four-year term, and one member for a five-year term. Thereafter, one member shall be selected annually for a five-year term. This committee shall have the power to receive subscriptions, collect past due accounts, and otherwise carry on the business of publishing the JOURNAL for the calendar year shall be apportioned according to the direction of the Council. This committee shall have sole jurisdiction over the scientific material and other matter offered for publication and a majority decision on any shall be binding. The committee shall empower the secretary-manager to incur such expenses as are deemed necessary. The secretary-manager shall have the power to sign advertising contracts and to collect past due accounts.' "

"*Be It Resolved,* That Chapter VIII of the By-Laws of the West Virginia State Medical Association be hereby amended by the adoption of the following section:

" 'SECTION 9. The Committee on Constitution and By-Laws shall consist of three members appointed by the president, with the approval of the Council, and all proposed changes in either the Constitution or By-Laws shall be referred to this committee for consideration and report. The first committee appointed after the adoption of this resolution shall be named; one member for a one-year term; one member for a two-year term; and one member for a three-year term. Thereafter, one member shall be named annually for a three-year term.' "

On motion of Dr. Hoge, seconded by Dr. R. H. Bobbitt and others, the amendments were adopted.

Dr. R. H. Walker offered the following resolution, which was adopted:

"WHEREAS, This Association passed on May 8, 1935, a resolution relative to reestablishing and maintaining the School of Medicine of West Virginia University on a Grade-A basis, and

"WHEREAS, It appears that internal reorganization has been made and experienced personnel added, so that with additional physical facilities such basis will be reached,

"*Be It Resolved,* That this Association request the governing bodies of West Virginia University, the Board of Public Works, and through said Board of Public Works, the Legislature of West Virginia to obtain the necessary buildings and equipment for the purpose of reestablishing said School of Medicine in its present scope of work to a Grade-A basis; and

"*Be It Further Resolved,* That said governing bodies of the State of West Virginia report to the legislature such federal funds as may be available for use in this connection; and

"*Be It Further Resolved,* That copies of this resolution be sent to His Excellency, the Governor of West Virginia, to the Secretary of the Board of Governors of West Virginia University, and to the West Virginia Board of Control, together with expressions of assurance that this Association will at all times coöperate and assist in carrying on the program herein recommended."

On motion of Dr. Hoge, the House of Delegates

gave a rising vote of thanks to the Marion County Medical Society, the City of Fairmont, the Fairmont Hotel, the Woman's Auxiliary and to all those who contributed so splendidly to the success of the sixty-ninth annual meeting.

There being no further business to come before the House of Delegates, the meeting adjourned at 11:10 p. m.

REPORT OF EXECUTIVE SECRETARY

This report will be fairly brief, because the reports of all the various Association committees will cover to a large extent the Association activities of the past 12 months.

As there was no session of the West Virginia Legislature since our Wheeling meeting last year, there will be no report of the Legislative Committee. Hence, I would like to review briefly what we can reasonably expect from the coming special session of the legislature on social security legislation.

Several months ago a special legislative committee on social security was appointed by Governor Kump to draft social security legislation in conformity with federal laws so that our State will be eligible for federal grants and matched federal funds. This special committee recently completed its work and it appears that the legislature will be called upon to act upon the following phases relating to social security:

1. Pensions for the aged.
2. Aid for dependent children.
3. Aid for the blind.
4. Maternal and child welfare.
5. Increased aid for crippled children.
6. Adult physical rehabilitation.

From our standpoint, adult physical rehabilitation is probably the most important and far-reaching of the entire social security program. The recommendation of the special committee favoring adult physical rehabilitation resulted from the very interesting and successful experiment in adult physical rehabilitation which was carried out last fall by the West Virginia Relief Administration under the direction of our Association Advisory Committee on Medical Relief. I think this will be covered to some extent in the report of this committee. In any event, it appears certain that our State Legislature will be requested to set aside $200,000 per year for a three or perhaps a five year period for the purpose of conducting a comprehensive State-wide adult physical rehabilitation program for West Virginia. This is pioneer work. It is something that has not been attempted, so far as we can learn, by any other state. The demand for the program is the direct result of our Association through its Relief Advisory Committee. The results of last fall's experiment were placed before the Special Legislative Committee members and the figures were so convincing that it took little persuasion to "sell" the individual members of the committee on the value and importance of including this program in their social security recommendations.

If this program goes through it will remove several thousand heads of families from the relief rolls and restore them to their private family physicians. Proper support by the medical profession should insure the passage of this phase of the proposed social security legislation.

Considering the entire social security proposals for West Virginia, it is estimated that the complete program recommended by the special committee (including adult physical rehabilitation) will call for an annual State appropriation of $4,000,000 per year with which to match federal grants. It is understood that this appropriation does not contemplate the raising of any revenue over and above that already available. It is thought that surpluses accumulated by the State Liquor Commission, together with other funds now available, will adequately carry the excess load. Consideration of unemployment insurance will be carried over to the regular session of 1937.

The administration of the State's social security program will be handled by a special council of five members, and one member of that council will be the State Health Commissioner. The central authority for the program will be the State Department of Public Welfare. There will be, however, adequate measures for local responsibility and control in each county, and all county medical societies are hereby urged to take an active interest in the guidance and direction of their local programs if and when this proposed social security legislation is adopted.

Most of the remaining features of the Social Security Act are of interest to the medical profession, insofar as they tend to decrease the indigency of our citizenship. As indigency is decreased the natural tendency will be to mitigate the pressure of free work requirements which now appears to be morally incumbent upon the medical profession.

When the special session of the legislature convenes we will attempt, with our somewhat limited facilities, to get out weekly or bi-weekly bulletins to

each county society upon the progress and developments of the Social Security Act.

Membership: At the close of the year 1935 the Association had 1115 members in good standing. At the present time we have 1083 members in good standing with 71 unpaid, or a total of 1154. At convention time last year we had 136 on the delinquent list. We have lost 20 members during the past year through death, we have lost approximately 30 more through transfer, and we have added 77 new members since January 1, 1936.

County societies deserving of honorable mention in their membership records include the following with 100 per cent paid-up membership: Barbour-Randolph - Tucker, Brooke, Doddridge, Eastern Panhandle, Grant-Hardy-Hampshire-Mineral, Kanawha, Taylor and Wyoming. Creditable increases in membership have been experienced by Kanawha with 15 new members since January first, Cabell with 10, Central West Virginia with eight, Fayette with six, and Mercer with six.

Finances: The Association, and particularly the JOURNAL, has enjoyed a successful financial year. The financial statement made by Auditor B. H. Puckett, certified public accountant, on May 1, 1936, shows a balance at the beginning of the fiscal period of $21,478.62. Income from all sources during the past 12 months amounted to $19,236.03. Disbursements amounted to $17,324.96, leaving a balance of $23,389.69. To this should be added the cash surrender value on the Nicholson life insurance policy which is now $6,525.00, making a total Association balance at the present time of $22,914.69. These figures will be verified by the annual audit which will be presented by Dr. T. M. Barber, treasurer.

The Nicholson property account may be of particular interest to the Association members, as it showed a fair profit for the first time since the property was taken over by the Association. Receipts from rent during the past 12 months amounted to $308.38, leaving a net profit for the year of $531.62.

Journal: THE WEST VIRGINIA MEDICAL JOURNAL enjoyed one of its most successful years. Advertising receipts for the year amounted to $6,223.17. Total disbursements amounted to $4,883.75. Hence a net profit was experienced of $1,339.42, bringing the total assets of the JOURNAL to $9,449.83. To this could be added $1500 borrowed by the Association from the JOURNAL fund in 1932, making a total profit by the JOURNAL during the past nine years of $10,949.83. I have figured the profit over a nine year period for two reasons: first because that is the length of time that JOURNAL financing and advertising has been under my control, and second because nine years ago, when I took over the JOURNAL, it was $600 in debt. I feel that it should be pointed out that this profit has been made entirely on advertising, and that the JOURNAL has never drawn a cent from the Association for subscription rates. If I may say so, I am extremely proud of this JOURNAL record because the JOURNAL has been converted from a losing proposition to a profitable enterprise that can now account for one-third of the total assets of the Association.

While both the Association and the JOURNAL have shown comfortable margins of profit for the past year, it should be pointed out that this profit would have been considerably larger had it not been for considerable expenditures for new equipment, furniture and fixtures and a general refurnishing of the Association headquarters. The JOURNAL purchased a new electric Addressograph machine and other equipment late last summer, and the Association purchased new floor coverings, new library furniture; and, in keeping with modern trends—venetian blinds. In addition, the Association has spent more than $1,000 on the Founders' Monument at Rivesville. I think these can all be classed as non-recurrent expenditures. The total amounted to approximately $1800, which amount should not be considered as a part of the operating expense of the Association headquarters office.

In closing I wish to express my sincere gratitude to the officers, councillors, delegates and committee officials of the Association, and particularly to the county society secretaries, for the friendly spirit of coöperation and understanding that has prevailed for the past 12 months. To Dr. Walker, who retired from the presidency with the new year, and to Dr. C. G. Morgan, our present president, I hereby pay just tribute for their kind and able direction of the affairs of the office over which I have supervision. The attitude of the Association members toward the Association headquarters office has made my work unusually pleasant and happy. I sincerely hope that my own modest efforts will be reflected somewhat through the reports of the various Association committees which I have served as ex-officio secretary.

JOE W. SAVAGE,
Executive Secretary.

AUDITOR'S REPORT

To The Council,
West Virginia State Medical Association,
Charleston, West Virginia.

GENTLEMEN:

Pursuant to my engagement, I have audited the receipts and the disbursements of the several funds of the West Virginia State Medical Association, covering the fiscal year ended April 30, 1936.

Beginning with the balances as set forth in my audit for the preceding year, I have made test verifications of receipts, examined cancelled vouchers covering all disbursements, and reconciled the cash book balances with statements from the depositories. As a result of my audit, I hereby certify that all receipts of record have been fully accounted for as stated in the attached statements.

At the beginning of the fiscal year on review, there was a balance of $21,478.62. There was a total income from all sources during the year in the amount of $19,236.03. Disbursements, exclusive of an addition of $352.80 to the Annuity Contract with the Fidelity Investment Association, amounted to $17,324.96, leaving a balance of $23,389.69. This balance was composed of cash in the amount of $8,166.92, investment in Annuity Contract $1,780.00, and investment in Nicholson property $13,442.57.

In addition to the assets enumerated at the end of the period, there is a cash value on the insurance carried on the life of Dr. Nicholson. Annual premium in the amount of $1,271.00 was paid from the general fund increasing its value from $5,860.00 to approximately $6,525.00.

Respectfully submitted,
BEN H. PUCKETT,
Certified Public Acountant.

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS

Balance Brought Forward May 1, 1935		$21,478.62
Receipts		
Dues	$11,288.00	
Advertising	6,114.33	
Emblems and Frames Sold	86.00	
Interest on Bank Balances	30.86	
Commercial Exhibits	854.00	
Rent	840.00	
Miscellaneous	22.84	$19,236.03
		$40,714.65
Disbursements		
General Fund	$10,646.45	
Medical Journal Fund	4,883.75	
Indigent Fund	300.00	
Convention Fund	1,186.38	
Nicholson Property Fund	308.38	$17,324.96
BALANCES APRIL 30, 1936:		
Cash—Charleston Nat'l Bank:		
Checking Account	$ 8,030.50	
Savings Accounts	136.42	
Annuity Contract—Fidelity Investment Ass'n.	1,780.20	
Investment in Nicholson Property	13,442.57	$23,389.69

GENERAL FUND

Balance Brought Forward May 1, 1935		$ 9,059.59
Receipts		
Dues	$11,345.00	
Less: Refunds	57.00	$11,288.00
Total to be Accounted for		$20,347.59
Disbursements		
Salary of Executive Secretary	$ 4,495.00	
Office Salaries	1,189.00	
Office Supplies and Expense	653.88	
Office and Library Rent	440.00	
Library Expense	561.37	
Telephone and Telegraph	232.04	
Postage	391.91	
Traveling Expense	501.41	
Reeves Monument	338.00	
Annual Premium for Insurance on life of Dr. Hugh G. Nicholson	1,271.00*	
Miscellaneous Unclassified	572.84	$10,646.45
BALANCE APRIL 30, 1936		$ 9,701.14

*The cash surrender value on this Policy is $6,525.00 as of July 1, 1936.

MEDICAL JOURNAL FUND

Balance Brought Forward May 1, 1935			$ 8,110.41
Receipts			
Advertising	$ 7,008.74		
Less: Discounts	894.41	$ 6,114.33	
Emblems and Frames sold		86.00	
Miscellaneous		22.84	$ 6,223.17
Total to be Accounted for			$14,333.58
Disbursements			
Printing	$ 4,264.61		
Engraving	386.57		
	$ 4,651.18		
Less: Discounts	154.32	$ 4,496.86	
Postage		126.00	
Travel Expense		89.50	
Addressograph		134.25	
Dictionaries		37.14	$ 4,883.75
Balance April 30, 1936:—			
Cash		$ 7,669.63	
Annuity Contract with Fidelity Investment Ass'n.— Balance May 1, 1935	$ 1,427.40		
Paid this period	352.80	$ 1,780.20	$ 9,449.83

INDIGENT FUND

Balance Brought Forward May 1, 1935	$ 3,643.16
Receipts	
Interest on Bank Balance	$ 28.75
Total to be Accounted For	$ 3,671.91
Disbursements	
Mrs. S. A. Daniel	$ 300.00
Balance April 30, 1936	$ 3,371.91

MEDICAL DEFENSE FUND

Balance Brought Forward May 1, 1935	$ 60.81
Receipts	
Interest on Bank Balance	$ 2.11
Balance April 30, 1936	$ 62.92

CONVENTION FUND

Balance Brought Forward May 1, 1935		$ 466.78
Receipts		
Commercial Exhibits		$ 854.00
Total to be Accounted For		$ 1,320.78
Disbursements		
Supplies and Labor	$ 173.12	
Travel Expense	336.81	
Entertainments	404.01	
Reporting	272.44	$ 1,186.38
Balance April 30, 1936		$ 134.40

NICHOLSON PROPERTY ACCOUNT

Balance Brought Forward May 1, 1935		$ 137.87
Receipts		
Rents		$ 840.00
Total to be Accounted for		$ 977.87
Disbursements		
Insurance	$ 8.00	
Taxes	239.12	
Repairs	61.26	$ 308.38
		$ 669.49
Cost of Property		$13.442.57
Deficit — Fund Account April 30, 1936		$12.773.08

COMMITTEE ON INSURANCE

WEST VIRGINIA STATE MEDICAL ASSOCIATION

Your Committee on Insurance was authorized by the Association Council on December 13, 1935. On January 1, 1936 the incoming president, Dr. Charles G. Morgan, appointed this committee consisting of myself as chairman, Dr. G. A. Smith, Montgomery, and Dr. R. H. Wharton, Parkersburg.

The committee held its first meeting in the early Spring at which time it was agreed:

1. To make a study of voluntary insurance plans now in operation in West Virginia for the purpose of providing hospital or medical service for the low income group.

2. To work toward the eventual possibility of a standardized "list" contract for the entire State that would eliminate the present evils of the "list" system and provide free choice and adequate remuneration of both physician and hospital.

3. To encourage groups of low income to consult with the Association's Committee on Insurance relative to any plans they might have for hospital or medical insurance.

4. To measure all voluntary health insurance plans by the yardstick provided by the House of Delegates of the American Medical Association when it adopted the 10 fundamental principles governing all health insurance schemes.

There are two voluntary hospital insurance plans now in operation in West Virginia: Hospital Service, Inc., of Charleston, and Associated Hospitals, Inc., of Bluefield. The two plans are almost identical. They both provide hospitalization only. They both permit free choice of hospital and physician. They both operate on a monthly payment plan, usually in groups through payroll deduction. The financing of both plans is entirely sound, as both plans are backed by the service of the hospitals rather than by the income from the premium payments. Both plans provide that losses shall be absorbed by the hospitals by prorating funds available for payment of hospital bills. Both plans include all hospitals in their particular competing areas, so that the element of commercial competition is eliminated.

Our only recommendation to both Hospital Service and Associated Hospitals shall be that each group either curtail or eliminate entirely the out-patient service provided in their agreements with their subscribers. The handling of out-patient service provides the only serious hazard for the physician in private practice. Aside from this one point, we feel that both of these groups are under the guidance and direction of the medical profession and that they render a useful purpose without interfering with the private practice of medicine. If this report is adopted by the House of Delegates, we shall assume that its adoption will include the sanction of the House of Delegates for this committee to proceed as above outlined.

List Practice: This committee feels that "list" practice, involving both physicians and hospitals, could be so arranged that it would be a lasting benefit to the list patients, to the physicians and to the hospitals. Without going into a lengthy discussion of the merits and demerits of the present system, we wish to point out that a uniform "list" contract approved by this Association to govern the entire State along certain well-defined principles is not an impossibility. In our opinion, such a contract could be worked out to include free choice of physician and hospital, and remuneration for both on the basis of work done. To accomplish such an end will take many months of patient and persistent work. Such a contract should not in any way work a hardship upon the miners and their families who, through no fault of their own, have grown up to depend on our West Virginia "list" system. Our opinion that such an end can be accomplished is based upon observations and contacts already made by this committee toward that end. At the present time we are con-

ferring with the officials of one of the largest coal companies in McDowell county who are keenly interested in revamping their present "list" plan so their employees may enjoy free choice of physician and hospital and so that the physicians and hospitals caring for their employees shall be remunerated not on a fixed monthly basis but upon a basis of actual work done. The company mentioned above approached our committee for guidance, and if the plan is adopted (and we have every reason to think it will be) we believe we will have reached a starting point from which to work toward the goal of a uniform, ethical insurance system for the miners and their dependents.

Two groups of employees have already consulted with this committee relative to proposed voluntary sickness insurance plans. Both groups are employed by large industries near the City of Charleston, and the employers of both groups have agreed to sanction payroll deductions for sickness insurance. To both groups we pointed out the pitfalls of sickness insurance, corrected many of their erroneous impressions in this regard, and laid down certain fundamental principles by which they would have to secure the approval or coöperation of the medical profession. Both groups are still working on their respective plans and they are still consulting with this committee in an effort to provide a system that will work to the best interests of all parties involved in any sickness insurance scheme.

We wish to make it clear at this point that this committee is not endeavoring to promote or work out sickness insurance plans for any group or any industry. We feel that the age-old system of paying a doctor for what he does at the time he does it is the best system to all concerned, and for all time. What we are trying to do is to meet a situation that is rapidly growing in West Virginia, a growing demand for monthly payment sickness insurance. So long as this demand continues we shall continue to cope with it to the best of our ability, guiding and directing such plans into channels that will prove the least harmful to those who are sick and to those who heal the sick. In other words we are not promoting sickness insurance; we are simply trying to guide it.

This committee has been in existence less than six months. We have been organized for a shorter period. Hence the brevity of this report. We have tried to outline our policy within the committee by reviewing briefly what has been already accomplished, and if this meets with your approval we shall continue along the lines herewith mentioned.

W. R. HUGHEY, *Chairman.*
G. A. SMITH, *Member,*
RAY WHARTON, *Member.*

RELIEF ADVISORY COMMITTEE

Your Advisory Committee on Medical Relief ceased to function on January 1, 1936, when the withdrawal of federal relief funds from West Virginia did away with the medical relief program of the West Virginia Relief Administration. This brief report, therefore, deals with the period from May until December, 1935.

Shortly after our report was made at the Wheeling meeting last year, our committee began work on a proposed adult physical rehabilitation program to be sponsored by the relief administration. Mr. Charles E. Ritter was placed in charge of this work and, through his efforts, assisted by the committee, a study was made of the disabilities of relief clients that were discovered during the physical examination program made some months prior to our last report. This study disclosed that there were approximately 6,000 heads of families in West Virginia who were unable to secure gainful employment because of physical handicaps. Of this total number, more than 4,000 of the cases were hernias.

After a considerable amount of preliminary work, the rehabilitation program was approved and began operating about October 1, 1935. From that time until federal funds were withdrawn late in December, 120 rehabilitation cases had been hospitalized and rehabilitated by surgical procedure. Both the surgical and hospital fees were worked out by our committee and these fees were apparently satisfactory to all parties concerned. The cases averaged about $115 each, of which the surgeons received approximately 48 per cent and the hospitals 52 per cent.

A recent survey has shown that 82.5 per cent of these cases are now back in private employment, supporting their families, and their names removed from the relief rolls. Figures show that a successful rehabilitation case, over a 10 year period, will repay 1500 per cent on the original investment.

This program was of extreme interest to the medical profession for a number of reasons. First and foremost is the humanitarian angle. Second, the program was carried out entirely by doctors in private practice. Third, every case returned to gainful employment is removed from the relief rolls and

again becomes the private patient of some doctor in private practice.

The results obtained from this little experiment in adult physical rehabilitation were of such interest that they were presented to the joint legislative committee on social security this spring and this joint committee has recommended the adoption by our State Legislature of a permanent program of adult physical rehabilitation with an annual appropriation of $200,000 with which to carry out the program. The bill for this program has already been presented to the legislature and there is every reason to believe that it will be adopted as an economic as well as a humanitarian measure.

We cite this experimental program of adult physical rehabilitation and the outlook for a continued permanent program as a part of the important work which this committee has accomplished. By guiding the experimental program, we feel we were largely responsible for its success. If a permanent program is adopted by our State government, we are assured that our Association will be requested to continue its guidance and direction of adult physical rehabilitation in West Virginia. Should the Association desire our further help in this regard, we will be glad to serve in any way that you might request.

As for the cessation of the medical relief program, I think all of you are familiar with its history. The entire program was terminated quietly and amicably on November 20, 1935. Although our committee received some criticism at various times during our long period of service with this ticklish problem, we were more than repaid for our services by the many friendly letters that came from our Association members and from State and Relief Administration officials commending our modest efforts for guiding medical relief along the least objectionable lines.

Signed, B. H. SWINT, *Chairman.*
G. G. IRWIN, *Member,*
J. W. MOORE, *Member.*

ADVISORY COMMITTEE ON WORKMAN'S COMPENSATION

At the December 13, 1935, meeting of the Association Council, Mr. Albert G. Matthews, Workman's Compensation Commissioner of West Virginia, appeared and requested that a medical advisory committee be appointed to confer with him upon all matters of interest or dispute pertaining to the medical profession. The Council authorized the appointment of such a committee. On January 1, 1936, having completed our work with the West Virginia Relief Administration, Dr. C. G. Morgan, newly installed president, appointed Dr. G. G. Irwin, Dr. J. W. Moore and myself as members of the committee.

Our first meeting with Commissioner Matthews was held early in January, at which time certain understandings were reached for our respective guidance. It was agreed to meet on the first Monday of each month. It was further agreed that in all disputes over medical claims, the decision of our committee was to be final. It was agreed that no changes would ever be made in the compensation fee schedule without first consulting and securing the consent of our committee. Lastly, it was agreed that any member of the Association (in fact, any doctor in the State) could appeal direct to our committee any claim or grievance which the appellant felt had not received a fair deal from the Compensation Department.

Since this original organization meeting, this committee has met five times with Commissioner Matthews, his assistant, Mr. Ralph Hartman, and Dr. J. B. Banks, head of the compensation medical department. We have settled a number of matters of minor policy and we expect in the near future to bring about an upward revision of a few of the present compensation fee allowances. We have received appeals from about half a dozen physicians. We increased one of these claims 55 per cent, another approximately 25 per cent, and the remainder of the appealed claims were allowed to stand as fair settlements by the Compensation Department. In every instance, we secured complete statements and data from the appellants and the complete files and records of the disputed cases from the Compensation Department. Each appeal was thoroughly studied and investigated before we attempted to arrive at any decision. In all of the appeals that were turned down, the committee found that the disagreement between the appellants and the Compensation Department involved interpretations of the rules and regulations of the department, and did not indicate any attempt on the part of the appellants to "gouge" the compensation fund. This committee, of course, must adhere strictly to the rules and regulations and to the compensation fee schedule.

Our committee has received a number of inquiries and complaints about rehabilitation cases. It has been charged that many of the rehabilitation cases are "lured away" from their family physicians, brought to Charleston, and rehabilitated by Char-

leston doctors in Charleston hospitals. At the present time we are engaged in a comprehensive study of all rehabilitation cases of the Compensation Department for the past three years. Complete figures and data are not yet available, but we expect to finish this investigation within the next 30 days. The results of our investigation will, of course, be turned over to the Association. I might say that Commissioner Matthews has been most coöperative in placing the complete files of the Compensation Department at our disposal in conducting this investigation. Otherwise it would be impossible to arrive at any satisfactory conclusions relative to the charges made to this committee.

This committee has been in existence but a short time. We still have a great deal to learn about the work to which you have assigned us. However, we shall do our best to serve the medical profession in a fair and impartial manner so long as we continue in our present capacity.

In closing I would like to make one request of the Association members on behalf our our committee. If you appeal to our committee from any decision of the Compensation Department, try to make sure beforehand that your appeal is reasonable. I will say frankly that we will decide each case on its individual merit and that we will not under any circumstances show favoritism to any individual doctors. To adopt any other attitude would ruin whatever effectiveness we might otherwise have. So, if an appeal is unreasonable or unjust, or if it is not based upon the fee schedule and the rules and regulations, it will place this committee in the awkward and unhappy position of turning down its own confreres. We do not want to discourage appeals, but we do want them to be just and reasonable so that we will be able to accomplish the greatest amount of good for the largest number of our Association members.

Signed, B. H. SWINT, *Chairman.*
G. G. IRWIN, *Member,*
J. W. MOORE, *Member.*

COMMITTEE ON MATERNAL WELFARE

As chairman of the Committee on Maternal Welfare it is with much embarrassment and chagrin that I am compelled to report that but little progress has been made toward accomplishing any results in the work for which the committee was organized.

In only three districts have the local chairmen reported to me the appointment of the two members to serve with them to coöperate in furthering the campaign along the lines desired.

The activities of the district committees have been confined to a very few efforts to address groups on the subject of maternal welfare. In not one of the districts of the State has there been the coöperation of a single county medical society with the district committee.

The general chairman has conferred with several of the district chairmen and the answer is the same in each instance. That is that the other physicians are not in sympathy with the idea and refuse to be coöperative. The district chairmen feel a marked embarrassment about approaching interested organizations, or at least those which should be interested, such as Mothers' Clubs, Parent-Teacher bodies and so on, with offers to have some physician appear on their program on the subject of maternal welfare. They express the hesitancy as being due to the attitude which the other physicians of the city, county or district will adopt; namely, one of sarcastic comments that the members of the committees are endeavoring to advertise themselves. This is a rather severe arraignment of our profession and one which it is difficult for the chairman of your committee to believe of such a professionally progressive group as comprises the membership of the West Virginia Medical Association.

In view of the situation outlined above, your chairman accepted the assignment by our president to the Advisory Committee organized by the State Commissioner of Health, Dr. McClue, to act with his department in the development of a program for carrying out the provisions of the Federal Social Security Act in regard to Child Health and Maternal Welfare.

Your chairman has been in attendance at the two meetings of this Advisory Committee which have been called by Dr. Blake, who heads the department to which this activity has been assigned.

The plans are not completely formulated as yet for the program of the campaign of education along the lines of Child Health and Maternal Welfare. This plan of the State Department of Health will be presented to the profession in due time. It is to be hoped that the membership of the local societies will coöperate one hundred per cent.

In closing let me express my appreciation of our State Commissioner of Health. I am impressed by his earnestness in carrying out the duties of his office but even more am I impressed by his desire to work

hand in hand with the medical profession of the State in accomplishing this end.

JAS. R. BLOSS, *Chairman.*

COMMITTEE ON CHILD WELFARE

Mr. President, Members of the House of Delegates:

Community concern for the welfare of its children is one of the distinguishing and hopeful portents of our twentieth century civilization. Society is now concerned with the welfare of the children of our State.

The health of the child is going to be safeguarded by some organized group and rightfully that group should be the organized medical profession. It is our solemn obligation to assume the leadership of any program which has for its objective, child health protection and health education. In the event we fail in our responsibility, the estate or some lay organization will of necessity come in to our field and relegate us into the background.

Your committee feels that such a happening would not accomplish the best result for the child, and would serve to bring reproach on our profession. This would demonstrate our inability or unwillingness to accept our rightful responsibility.

Your committee, coöperating with the State Health Department, and the social security infant and maternal welfare allotment of funds for postgraduate courses for physicians has completed the arrangements for the holding of such courses throughout the State, during the months of July and August. The exact location is to be announced later.

It is the wish of the committee to reach every physician in the State, the first thought being the rural physician. All phases of child health are to be discussed. The majority of the county medical societies have voiced their approval of the program. The committee plans to have each society choose from its membership, speakers to appear before all lay organizations in order to present the subject of child health protection. Literature covering all points to be presented in these talks will be available to all physicians in the near future through the medium of the State Health Department.

The committee has had no funds with which to prepare statistics or gather information which was necessary to acquaint both the profession and the public with facts that would make them properly appreciate the need for such work.

The State Health Department has expended much effort in preparing for the committee tabulations showing infant and child morbidity and mortality figures for the State. This information is now in the hands of the various sub-committeemen for use in their respective councillor districts.

The work of organization is practically complete. Funds which were delayed, are now available. Active work in carrying out this program is to start immediately.

Your committee feels that if the cost to humanity in the wastage of child life is ever to be stopped, and if the cost in dollars to the taxpayer or the institutional care is ever to be lessened, it will be through bringing the various problems back to the home and the community from which it came, and asking them to undo their misdeeds and redeem their failures. A single illustration of this point: According to reports from 26 countries to the League of Nations from 1921 to 1930, the United States showed the second highest reported attack rate of smallpox. Our State reported in the year 1935 approximately thirty-five cases and the incidence is increasing.

Your committee wishes to submit the following recommendations:

1. That the State Medical Association approve and support a law to be sponsored by the State Health Department to have compulsory smallpox vaccination before entering school.

2. That the Crippled Children's Department be brought under the supervision of the medical profession.

ANDREW E. AMICK, *Chairman.*

PUBLICATION COMMITTEE

To the Council and House of Delegates of The West Virginia Medical Association.

Gentlemen:

The Publication Committee desires to report to you another successful year for the JOURNAL.

In spite of the fact we had the largest bill for printing and engraving which we have ever had, a total of $4651.18, and purchased a new addressograph machine at a cost of $171.39, it is possible to report a net profit of $1339.42.

At the close of the last fiscal year the total assets of the JOURNAL were $8,110.41. At the close of the present fiscal year the assets are $9,449.83. This does not include the $1500.00 lent from the JOURNAL's funds for the Newquist survey some years ago.

Your committee has made no marked change in the physical make-up of the publication. We have endeavored to maintain the same high standard of

material as in the past. The increasing number of requests for reprints and for numbers containing especial articles is a source of satisfaction and leads us to feel that our efforts in this respect are not in vain.

We would call to your attention the fact that your Publication Committee has consistently and persistently refused to accept proffered advertising material of an unethical type. This would have been financially profitable if accepted, but your committee feels that it is better to have a smaller profit with a "clean" JOURNAL, rather than a large profit derived from questionable sources.

The committee again wishes to express its appreciation for the coöperation of the business manager, Mr. Joe W. Savage. Without his untiring energy and his ability to secure new advertising contracts this favorable financial report would not have been possible.

Respectfully submitted,

JAS. R. BLOSS, *Chairman.*
J. HOWARD ANDERSON,
CHESTER R. OGDEN,
C. A. RAY,
WALTER E. VEST.

COMMITTEE ON FOUNDERS' MONUMENT

(*Submitted by Dr. C. O. Henry, Fairmont*)

In the absence of the chairman, Dr. T. M. Hood, who is sick at home and is not able to be here, I want to make this report to you. I am a member of the same committee. The monument is completed and will be dedicated tomorrow afternoon between four and six o'clock at Rivesville, four miles below here. Transportation will be furnished for 150. I think any excess of that number will be provided for.

I am very sorry that I have to be the fellow to present this report for Dr. Hood, who is chairman of this committee and is not able to be here; it is doubtful whether he will be able to be at Rivesville tomorrow.

COMMITTEE ON SCIENTIFIC WORK

The Scientific Work Committee met at Parkersburg on September 21 with all members present. We appreciated the coöperation of the chairmen of the various sections in assigning out-of-state speakers for the general program. We have made just one important change in the program as previously arranged in assigning two sections to meet this morning and two in the afternoon. We had the Surgical

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Section and the Pediatric Section this morning and the Section on Internal Medicine and the Section on Eye, Ear, Nose and Throat this afternoon. The committee felt that most of the members of the State Association were general practitioners and would like to attend as many sections as possible. I understand that there was greater attendance at these sectional meetings than has hitherto been the case. We will be glad to know what your reaction is.

We regret that we were unable to place more State men on the program. We had about four times as many applicants as we could place. Those who could not be placed were referred to the chairmen of the various sections. After all, the work of this committee will be represented by the program as presented and we hope you will like it.

DR. IVAN FAWCETT, *Chairman*,
DR. W. C. SWANN,
DR. T. G. REED.

COMMITTEE ON CANCER

The Cancer Committee has attempted through the component medical societies and through the various districts to put on cancer programs among the physicians in the various county societies and among the laity without the aggrandizement of any one particular physician. There have been newspaper articles and radio broadcasts, and I think in a way that it has produced some results. The sole purpose is to advise the public to have periodic health examinations and not to go to any particular physician or any particular clinic or any particular hospital, but to go to their family physicians.

I am advised by various members of the committees who have attempted in the several component societies to get the societies to present the programs, that they have had considerable difficulty in doing this. I wish to advise the House of Delegates to take this message back to their various societies: That if they do not put on a cancer educational program among their people the Federated Women's Clubs are going to do it for them, and it would be much better for the various societies to do it themselves than to have the Federated Women's Clubs do it. I am advised by one of their national officers who is a resident of the State of West Virginia that there are funds being appropriated for the Federated Women's Clubs for these particular programs. My advice to the House of Delegates to take back to their county societies is that they try to encourage and bring about some enthusiasm so that it will not

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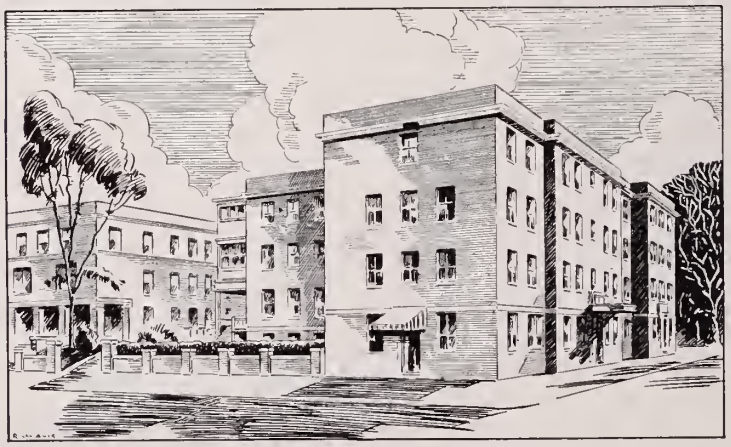

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J. Ross Hunter, M. D., F. A. C. S.
R. H. Dunn, M. D., F. A. C. S.
I. P. Champe, Jr., M. D.

Obstetrics:
U. G. McClure, M. D.

Obstetrics and Gynecology:
F. A. Clark, M. D.

Eye, Ear, Nose and Throat.
V. E. Holcombe, M. D.

Roentgenology:
V. L. Peterson, M. D.

Internal Medicine:
H. L. Robertson, M. D., F. A. C. P.
William C. Stewart, M. D.

Medicine and Pediatrics:
Hugh G. Thompson, M. D.

Orthopedic Surgery:
Randolph L. Anderson, M. D.

Urology:
Thomas G. Reed, M. D.

General Medicine:
W. O. McMillan, M. D.

Pathology:
M. Gillies, M. D.

Resident Physician:
B. D. Bosworth, M. D.
R. L. Webb, M. D.

McMillan Hospital Training School; Sara Hamilton, R. N., Supt. of Nurses; Alma McKay, R. N., Asst. Supt.
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be handled by laymen but will be handled by physicians.

DR. R. B. BAILEY, *Chairman.*

COMMITTEE ON NECROLOGY

It is with sincere sorrow and deep regret that this committee submits the following necrology report:

W. N. Haynes, Victor.....May 10, 1935
H. E. Oesterling, Wheeling .....May 21, 1935
E. E. Fankhouser, New Martinsv'e.May 31, 1935
A. J. White, Charleston.....July 1, 1935
E. L. Armbrecht, Wheeling ....August 10, 1935
R. D. Roller, Jr., Charleston....August 10, 1935
L. D. Stoner, Sophia .....August 15, 1935
W. L. Peck, Coalwood .....August 30, 1935
J. W. Corder, Clarksburg....September 26, 1935
R. M. McMillen, Wheeling..November 29, 1935
J. C. Lawson, Auburn.....December 28, 1935
W. B. Richardson, Parkersburg..January 1, 1936
D. C. Louchery, Clarksburg.....January 3, 1936
J. W. Bosworth, Philippi .....January 4, 1936
J. R. Boyd, Oakvale .....January 20, 1936
A. L. Coffield, New Martinsv'e.February 26, 1936
J. T. Carter, Triadelphia.....March 6, 1936
F. L. Baker, Burlington.....March 24, 1936
J. P. Cole, Wheeling.....March 24, 1936
R. F. Hufford, Welch.....May 19, 1936

W. E. VEST, *Chairman.*

SECTIONAL OFFICERS

Officers of the various special sections of the Association, and special societies affiliated with the Association, elected at the Fairmont meeting are as follows:

Section on Internal Medicine

Dr. R. J. Condry, Elkins, chairman; Dr. Oscar B. Biern, Huntington, secretary.

Section on Surgery

Dr. R. H. Edwards, Welch, chairman; Dr. L. M. Halloran, Beckley, secretary.

Eye, Ear, Nose and Throat Section

Dr. J. E. Blaydes, Bluefield, chairman; Dr. George H. Traugh, Fairmont, secretary.

Section on Pediatrics

Dr. A. A. Shawkey, Charleston, chairman; Dr. Raymond Sloan, Huntington, secretary.

West Virginia Heart Association

Dr. H. R. Sauder, Wheeling, president; Dr. P. A. Tuckwiller, Charleston, vice president; Dr. R. J. Condry, Elkins, secretary. (*Cont'd on page* xxiv)

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Alexander G. Brown, Jr., M. D.
Manfred Call, M. D.
Manfred Call, III, M. D.

Obstetrics:
Greer Baughman, M. D.
Ben H. Gray, M. D.
Wm. Durwood Suggs, M. D.

Ophthalmology, Otolaryngology:
Clifton M. Miller, M. D.
R. H. Wright, M. D.
W. L. Mason, M. D.

Physiotherapy:
Elsa Lange, B. S., Technician
Margaret Corbin, B. S.

Medical Illustrator:
Dorothy Booth

Surgery:
Robert C. Bryan, M. D.
Stuart N. Michaux, M. D.
Charles R. Robins, M. D.
A. Stephens Graham, M. D.
Charles R. Robins, Jr., M. D.

Pathology:
Regena Beck, M. D.

Urological Surgery:
Joseph F. Geisinger, M. D.

Oral Surgery:
Guy R. Harrison, D. D. S.

Roentgenology and Radiology:
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L. O. Snead, M. D.

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Dr. Harry G. Steele, Bluefield, president; Dr. W. A. Cracraft, Wheeling, vice president; Dr. Edwin J. Humphrey, Huntington, secretary.

COUNTY SOCIETY NEWS

Due to the publication of the Convention Transactions in this issue of the JOURNAL, there was not sufficient space for the publication of the monthly news notes of the various component county societies. All county society news, Auxiliary news items and other matters of interest which were omitted from this issue will be carried over and used in the August JOURNAL.

BIRTH CERTIFICATES

Recently, one of our larger cities in which there is an exceptionally good city health department and in which much work in infant hygiene had been done by the local medical group, received some unfavorable nation-wide publicity because of a very high infant mortality rate.

The reflection in such cases is not on the health department alone. The quality of the medical services available to the people of the community is open to criticism.

In this instance the local physicians were greatly to blame, not because of the quality of their services, but because of laxness on the part of some in reporting births.

Infant mortality rates indicate the number of deaths of infants under one year of age per thousand live births. Practically all of the deaths are reported. When the births are not reported the calculated infant mortality rates are increased. If twenty-five per cent of the births are unreported, the infant mortality rate is increased not by twenty-five per cent but by thirty-three and one-third per cent. When 50 per cent of the births are not reported the infant mortality rate is increased by 100 per cent.

The reporting of births is a social and legal obligation of the person attending the birth. Thus, when a physician fails to report a birth, his neglect, in addition to causing embarrassment to the child when it reaches the ages when birth certificates are needed for many purposes, may bring unfavorable criticism on the whole medical group in the community.

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DOROTHY JOHNSTON ..... *Superintendent of Nurses*
LOUISE LYNCH ..... *X-ray and Laboratory Technician*
MRS. D. A. LYNCH ..... *Dietician*

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The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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Huntington, W. Va.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII AUGUST, 1936 No. 8

X-RAY THERAPY IN BRONCHITIS IN CHILDREN*

By Russell C. Bond, M. D. and Charles H. Clovis, M. D.
Wheeling, West Virginia

The use of röentgen rays in the treatment of pulmonary conditions, especially asthma and chronic bronchitis, is not new. Schilling in 1906, first used x-ray in the treatment of asthma. It is interesting to note that this treatment was accidentally discovered when a patient whom Dr. Schilling was examining with x-ray, reported relief following this examination. This led him to the first use of röentgen rays as a therapeutic agent in asthma. Schilling's method of treatment was the direct method, applying the rays directly to the thorax. He felt the action of the ray was on the ciliated epithelium of the walls of the bronchi and the goblet cells which secrete mucous. Gottschalk's idea was that x-ray acted chiefly on enlarged tracheobronchial and peribronchial glands, these glands being responsible for irritation of the bronchi and perhaps also fibres of the vagus nerves.

The indirect method of treating asthma is to irradiate the spleen along with the chest. The action here is not clearly explained, nor can it be.

Gerber reported good results with x-ray therapy in bronchitis, and especially chronic bronchitis following pertussis and influenza in children. Scott irradiates both front and back of the chest and reports favorable results. Desjardins gives an excellent review of all the literature on this subject from 1906 to 1932 and suggests that the exposure of the chest to the röentgen ray irradiates a large volume of blood, (the great vessels, heart and lungs) which may be a factor in producing a beneficial effect.

In this paper we wish to report a series of cases, fifty-nine children, under the care of one of us (R. C. B.). These cases, from their histories, gave the chief complaint of "cough", varying from one week to five years duration. The chronic cough was the symptom for which the patients were presented for examination and treatment. It is impossible to give a detailed history of each case in this paper,

*Read before Section on Pediatrics at Fairmont, June 8, 1936.

but a general discussion of the group as a whole will give a clinical picture of the type of case in which we have used and do use x-ray as a therapeutic agent. All x-ray therapy in these cases was given by one of us (C. H. C.).

These cases, which are common to everyday practice, must be studied before x-ray therapy is used. It would be quite a mistake to treat blindly every cough in this manner. Along with this therapy, local treatment to sinuses, removal of tonsils if indicated, allergic studies in asthma must be carried out. It was the failure of the cough to subside after local and general treatments were instituted that led us to use x-ray therapy. The remarkable improvement, namely the cessation of the cough, was to ourselves surprising, and we feel that this method of treatment has proven a valuable therapeutic agent.

These patients all seek relief from the cough. The parents are disturbed for two reasons: the thought of some serious pulmonary lesion being present and the physical effect of the cough on the child. Somewhat of lesser importance, but always present, is the annoying factor of hearing the child cough day and night.

Coughs in children may be due to one or more causes, from slight postnasal discharge to tuberculosis or a lung tumor. Sinusitis, adenoids, enlarged and diseased tonsils, habit spasm or tic, chronic pharyngitis, tracheitis, chronic bronchitis, bronchial asthma, asthmatic bronchitis, pertussis, bronchiectasis, empyema, lung cysts, lung tumors, mediastinal tumors, foreign bodies or tuberculosis may be responsible for the one symptom—cough.

After a careful history as to previous infections, as frequent colds, pertussis, pneumonia or asthmatic attacks, one can get a fairly good working basis. A thorough physical examination is necessary in each case. Examination of the nose, throat and chest is imperative, along with radiographs of the nasal sinuses and the lungs, examination of sputum and a tuberculin test.

This group of cases represent children who have had chronic coughs and have not obtained benefit or relief from ordinary medication. In spite of treatment, their cough had persisted. After examination, the following groups of diagnoses are the ones in which we class our patients, suitable for x-ray therapy:

1. Mild chronic bronchitis showing few râles in the lungs.
2. Upper respiratory infections, especially chronic tonsillitis, and sinusitis, which are accompanied and followed by a chronic cough.
3. True bronchial asthma, associated with cough.
4. Persistent cough following pertussis.
5. Persistent cough following pneumonia.

The explanation of the cough in these cases is, we believe, due to the involvement of the mediastinal, tracheobronchial and peribronchial lymph nodes. The tracheobronchial glands form four main groups: (a) tracheal, on either side of the trachea; (b) bronchial, in the angles between the lower part of the trachea and bronchi and in the angle between the two bronchi; (c) bronchopulmonary, in the hilus of each lung; and (d) pulmonary, in the lung substance, on the larger branches of the bronchi. These glands enlarge from upper respiratory infections, the well known sinus-bronchial syndrome in children, or from bronchial infections such as bronchitis, pneumonia, pertussis, and asthma of long duration. These nodes enlarge with infection present just as the cervical groups enlarge with tonsillar infections, and the axillary and inguinal enlarge with infections of the extremities. Chest x-rays in all these cases show this glandular enlargement, as well as some peribronchial and hilus infiltration. These enlarged glands, by pressure either on the bronchi and lung tissue, or irritation of the vagi produce the cough. The action of the röentgen rays cannot be fully explained other than the reasons given by Schilling, Gottschalk, Gerber and Desjardins.

The following table lists our cases in this small series:

No.	Age	Diagnosis	Duration of Cough	X-ray Chest	X-ray Sinus	Tbc. Test	No. of Treatments	Result	Notes
1	7 yrs.	Chr. bronchitis	3 mos.	Pos.		0	2	Good	
2	3 yrs.	Postpertussis	10 weeks				1	Good	
3	11 yrs.	Sinusitis Chr. bronchitis	3 to 6 weeks	Pos.		0	7 2—1930 3—1933 2—1935	Fair	Repeated Sinusitis with Cough.
4	8 yrs.	Postpertussis	12 weeks				2	Good	
5	8 yrs.	Sinusitis Chr. bronchitis	4 months			0	2	None	Third Week Mild Pertussis.
6	7 yrs.	Sinusitis Bronchitis	6 weeks	Pos.	Pos.		1	Good	
7	9 yrs.	Chr. bronchitis	3 months			0	4	Good	
8	2 yrs.	Chr. bronchitis	2 months				3	Good	
9	6 yrs.	Chr. bronchitis	6 weeks				4	Good	
10	6 yrs.	Chr. bronchitis Sinusitis	5 years			0	3	Good	
11	4 yrs.	Chr. bronchitis	7 weeks				1	Good	
12	6 yrs.	Chr. bronchitis	7 weeks				3	Fair	
13	7 yrs.	Sinusitis Bronchitis	4 weeks	Pos.	Pos.		3	Good	
14	3 yrs. 5 yrs.	Chr. bronchitis Asthma?	6 weeks				4 2—1933 2—1935	Good	Allergic—Asthma? Eczema
15	7 yrs.	Chr. bronchitis	4 weeks				1	Good	
16	5 yrs.	Chr. bronchitis	5 weeks				1	Good	
17	6 yrs.	Asthma	3 years			0	3	Good	True Asthma Hay Fever
18	8 yrs.	Chr. bronchitis Sinusitis	5 weeks	Pos.	Neg.		2	Good	
19	6 yrs.	Chr. bronchitis Sinusitis	1 year	Pos.		0	2	Fair	Poor Care Family
20	3 yrs.	Postpertussis Bronchitis	9 weeks	Pos.			1	Good	Postpertussis
21	10 yrs. 11 yrs. 12 yrs.	Sinusitis Chr. bronchitis	Average 3 weeks				(1 8/1933 3(1 7/1934 (1 3/1935	Good Good Good	Swimming Pool Sinusitis
22	8 yrs.	Chr. bronchitis	6 weeks			0	3	Good	
23	12 yrs.	Postpertussis Bronchitis	8 weeks	Pos.			1	Good	Severe Pertussis
24	9 months	Chr. bronchitis	4 weeks			0	3	Good	
25	6 yrs.	Chr. bronchitis	4 weeks			0	3	Good	Severe Pertussis
26	2 yrs.	Postpertussis	10 weeks				1	Good	Severe Pertussis
27	8 yrs.	Chr. bronchitis	3 months			0	3	Good	Chr. Sinusitis
28	14 months	Chr. bronchitis	4 months			0	2	Good	Recurrent N. & T. Infections
29	4 yrs.	Postpertussis	10 weeks				1	Good	Severe Pertussis
30	9 yrs.	Chr. bronchitis	6 weeks	Pos.	Neg.	0	3	Good	

No.	Age	Diagnosis	Duration of Cough	X-ray Chest	X-ray Sinus	Tbc. Test	No. of Treatments	Result	Notes
31	9 yrs.	Bronchiectasis Sinusitis	1 year	Pos.	Neg.	0	3	None	Refused N. & T. Treatment. Poor Cooperation.
32	12 yrs.	Chr. bronchitis	Recurrent			0	4	Good	Recurrent N. & T. Infections
33	9 yrs.	Chr. bronchitis Sinusitis	Recurrent 3 mos.	Pos.		0	3	Good	Recurrent Sinus
34	5 yrs.	Postpertussis	6 weeks				5	Fair	Severe Pertussis
35	12 yrs.	Postpneumonia Bronchitis	2 weeks	Pos.		0	1	Good	
36	9 yrs.	Postpertussis	8 weeks				2	Good	Severe Pertussis
37	8 months	Chr. bronchitis	4 weeks				1	Good	Repeated N. & T. Infection
38	5 yrs.	Postpneumonia	3 weeks	Pos.		0	3	Good	Postpneumonia
39	6 yrs.	Asthma Sinusitis	2 yrs.			0	3	None	Refused Allergic Studies
40	6 yrs.	Chr. bronchitis	6 weeks				4	Good	
41	4 yrs.	Chr. bronchitis	8 mos.			0	3	Good	
42	9 months	Chr. bronchitis	2 mos.	Pos.			2	Good	
43	2 yrs.	Chr. bronchitis	9 weeks				2	Good	
44	4 yrs.	Postpneumonia	5 weeks				1	Good	Postpneumonia
45	8 yrs.	Sinusitis Chr. bronchitis	4 weeks			0	2	Good	Chr. Bronchitis Severe Sinusitis
46	4 yrs.	Chr. bronchitis	7 weeks	Pos.		0	3	Good	
47	15 months	Chr. bronchitis	3 mos.	Pos.		0	3	Good	
48	6 yrs.	Postpertussis	10 weeks				2	Good	Severe Pertussis
49	3 yrs. 4 yrs. 5 yrs.	Asthma Bronchitis	1 mo. 2 weeks 1 week	Pos.	Neg.		5 2—1932 3—1934	Fair Good Good	Allergic Child Asthma
50	6 yrs.	Bronchitis	6 mos.	Pos.		0	3	Good	Steady Cough for 6 Months
51	5 yrs.	Chr. bronchitis Asthma? Pertussis	2 weeks				1	Good	Postpertussis Chr. Bronchitis Allergic Child Asthma. Hay Fever
52	1 yr.	Chr. bronchitis	4 weeks			0	1	Good	
53	3 yrs.	Asthma	5 weeks				1	Good	Allergic Child Asthma
54	8 yrs.	Chr. bronchitis	3 weeks				2	Good	
55	4 yrs.	Chr. bronchitis	2 weeks	Pos.			1	Good	
56	3½ yrs.	Asthma	6 mos.			0	1	Good	Allergic Child Asthma
57	10 yrs.	Postpneumonia Chr. bronchitis	4 weeks				2	Good	Postpneumonia Recurrent Cough
58	5 yrs.	Chr. bronchitis	4 weeks				2	Good	
59	5 yrs.	Chr. bronchitis Postpertussis	6 mos.			0	1		Postpertussis Frequent N. & T. Infection.

From preceding tabulations we find the age group varies from eight month to twelve years. The duration of the cough was from one week to five years. The tuberculin tests were all negative in those tested. Sinus disease clinically was not checked with radiographs. Chest plates were positive for enlarged glands in all cases indicated on the chart. As these patients were all private cases, some of limited means, it was not possible to obtain radiographs in all cases, except in imperative cases. In all new cases, seen for the first time, a complete study was made.

Grouping this series of cases according to diagnosis, they are as follows:

Types of Cases

Chronic bronchitis	26
Chronic bronchitis with sinusitis	11
Postpneumonic bronchitis	3
Postpertussis bronchitis	12
Asthma	4
Asthmatic bronchitis	2
Bronchiectasis	1

These cases are listed under primary diagnoses, but we wish to impress the point that the x-ray therapy was directed, not to the primary disease but to resultant glandular enlargement of the lymph nodes of the chest, responsible for the cough.

These cases were seen during the past six years, which is approximately ten cases a year. This is a small percentage of all cases seen during this period with bronchitis and related conditions, which brings out the point that ordinary cases do well, but an occasional case develops a chronic cough.

Four cases of true asthma are listed in the group. Likewise, this is a small percentage of all asthmatic cases seen, but these four all had chronic coughs which the others did not have, and were therefore treated for the cough, not asthma. One case of known bronchiectasis is included.

In the results we list them as good, fair and failure. The criterion of the effect of the x-ray treatment was based on one thing, the cessation of the cough, which up to the time of treatment had not been accomplished by any other method. After the cessation of the cough, all patients showed general improvement as to appetite, restful nights, activity and gain in weight. In fifty-one patients, good results were obtained, fair results in five (cases 3, 12, 19, 34, 49) and no result or failure in three cases (cases 5, 31, 39). These three failures occurred (1) in a case of unrecognized pertussis in the third week of the disease associated with sinus disease, (2) a case of bronchiectasis and (3) a case of true asthma refusing thorough study. Under fair results are listed cases that did not stop coughing completely with the maximum number of treatments given in succession.

The technique used by one of us (C. H. C.) in giving this type of x-ray therapy is as follows:

1. Target skin distance, 40 cm.
2. Filter, six mm. aluminum.
3. Kilovolts, 100.
4. Milliamperes, five.
5. Area (anterior chest only) vertical 12 cm.; lateral eight cm. (Vary according to size of patient).
6. Time, three minutes.

The "r" output of our machine with above factors is about 12 r's per minute. (Thirty-six r's per treatment measured on the skin surface).

Results

Good	51
Fair	5
Failure	3

The number of treatments given depend upon the result obtained. If the cough is completely relieved after one treatment, no further treatments are given. Likewise the same for the second and subsequent treatments. These treatments are given at weekly intervals, with the parents reporting results forty-eight hours after each treatment. Four consecutive treatments at weekly intervals, we feel, is the average maximum number in any one case. Two of our cases did receive four consecutive weekly treatments.

Number of Treatments

Minimum to one case	1	
Maximum to one case	7	
Total treatments to group	139	
Average per case	2	(2.3)

Total Treatment Groups

Patients receiving 1 treatment	18
Patients receiving 2 treatments	14
Patients receiving 3 treatments	19
Patients receiving 4 treatments	5
Patients receiving 5 treatments	2
Patients receiving 7 treatments	1

Except for two cases receiving four treatments in weekly succession, all others over three treatments were cases of recurrences. These patients had a recurrence of the cough a year or so later, and again immediately responded favorably. These cases are listed as follows:

Cases Receiving More Than Three Treatments

Five patients received four treatments.
Case 7—4 in 1932.
Case 9—2 in 1933; 2 in 1934.
Case 14—2 in 1933; 2 in 1935.
Case 32—4 in 1933.
Case 40—2 in 1932; 1 in 1933; 1 in 1934.

Two patients rceeived five treatments.
Case 34—2 in 1934; 3 in 1935.
Case 49—2 in 1933; 3 in 1934.

One patient received seven treatments.
Case 3—2 in 1930; 3 in 1933; 2 in 1935.

From the results obtained in this group of cases studied in actual practice, we are convinced of the efficacy of x-ray therapy. In these patients we have not observed any harmful effects following the use of x-ray. We do not use nor advise x-ray therapy in any acute pulmonary condition as acute bronchitis, pertussis, or asthma. We do not in any way recommend, advise, or suggest x-ray therapy as a panacea for all coughs. Each case is an individual case and must be studied thoroughly. When the patient with a chronic cough is studied carefully, and can be classified in one of the groups previously stated, then x-ray therapy is indicated and can be unhesitatingly recommended.

BIBLIOGRAPHY

1. Gerber: J. A. M. A. Vol. 85, 1026; 1925.
2. Gerber: Radiology, Vol. 9, 192; 1927.
3. Scott: Brit. Med. J., Vol. 1, 939; 1926.
4. Scott: Brit. Med. J., Vol. 1, 9; 1929.
5. Desjardins: Am. J. Rad., Vol. 28, 567; 1932.

PERSONALITIES TRANSFORMED

Motor mania has made gentlemen into boors and square-shooters into bullies. Eleanor Everet attacks such bad examples for "Tomorrow's Drivers" in the July *Hygeia.*

To combat poor driving technic in the next generation of drivers, Miss Everet describes the manner in which the New Jersey and New Hampshire high schools have surmounted this problem. Fifty-seven of these have added courses in correct automobile driving to their curriculums.

The instruction shies away from a routine recitation of rules of the road. Although state regulations are studied and discussed, a broad survey is made of the entire field of safe driving. Emphasis is placed on the causes and the prevention of accidents, the mechanics and safety features of the modern car, the mental and physical requirements of good driving, and the place of the automobile in modern living.

A cut-down chassis is frequently brought to the school for use in a lesson in mechanics. Motion pictures, slides and posters complete the other study facilities.

When a student has completed the driving course he is given two examinations, one prepared by the instructor and the other by the motor vehicle department of the state. Part of the state examinations are consequently waived when a student applies for a driving license.

Drivers may, generally speaking, be put into four classes. There is the individual who as a father and a business executive may have a reputation for the greatest consideration and judgment; but in his car he dons a cover-all of indifference or bravado.

The second type of poor driver is the person whose sight, hearing or strength is defective. The next category embraces the person who finds himself going home after a long, hard day or a long, hard social evening. Finally, there is the driver who provides his family and friends with repeated thrills. Casually watching his driving, he regales his listeners with tales of past exploits. He usually manages to add another experience to his repertoire while driving.

BRONCHIECTASIS*

(A Discussion of General Bronchiectasis and Bronchiectasis as It Occurs in Pulmonary Tuberculosis)

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APPROXIMATELY 26 per cent of all admissions to Hopemont Sanitarium are non-tuberculous. These cases after a period of observation and study are finally diagnosed: acute colds, non-specific pneumonitis, lung abscess, non-specific pleurisy, myositis, carcinoma of the lung, tonsillitis, organic heart disease with hemoptysis as the predominating symptom, chronic pulmonary emphysema, asthma, pneumoconiosis, malnutrition, various psychic states such as phychoneurosis and schizophrenia, thyrotoxicosis, malingering, etc. About 13 per cent of these non-tuberculous cases, which comprise three per cent of all admissions, are bronchiectasis. These cases, which had been previously diagnosed as pulmonary tuberculosis or sent to the sanitarium as observation cases, do not fall into the easily diagnosable text-book type, but are atypical and many are in the early stages of the disease.

The material for this study consists of 60 cases of bronchiectasis proven by bronchography, thus:

Thirty-eight cases of general bronchiectasis; two cases associated with lung abscess; two cases associated with pneumoconiosis; 18 cases associated with pulmonary tuberculosis.

In addition 42 plain films of patients with negative bronchograms are compared with the plain films of 42 cases of bronchiectasis.

Non-Tuberculous Bronchiectasis: Sex and Age—Of the 42 patients, 16 were males and 26 females. There were eight children under the age of 15, the youngest being seven. The adult age varied from 16 to 66; the average adult age was 30.

Classification: An attempt is made to classify these 42 cases as to the extent of involvement. There were 16 minimal cases with only a small portion of one lobe involved. There were 15 moderately advanced or lobar cases with approximately one lobe involved, and 11 far advanced covering more than one lobe and with extensive dilatation of the bronchi.

Symptomatology: The types of onset are as follows: Four gave the history of being perfectly well previous to a sudden pulmonary hemorrhage, three began with whooping cough, one with measles, one with pneumonia, and three followed an attack of influenza. Seventeen had frequent head and chest colds and the symptoms of these colds indeterminately merged with the later and more severe symptoms of their bronchiectasis. Three said that pleurisy was the earliest indication of the disease; one declared that his cause was being gassed in the war; one aspirated a bean when one year of age; four gave no definite onset; two were associated with lung abscess, and two were associated with pneumoconiosis. In the tabulation of the symptomatology the four cases associated with lung abscess and pneumoconiosis are omitted because it would be difficult to tell which disease gave rise to which symptoms. One hundred per cent of the remaining had cough, ranging from very slight to very severe; fifty-seven per cent experienced pulmonary bleeding either previous to hospitalization or while in the hospital; sixteen per cent gave a history of night sweats; sixty-six per cent weakness, and forty-six per cent had dyspnea. Sixty-nine per cent said they had fever, although only 33 per cent had an actual rise in temperature up to

*From the Medical Service at Hopemont Sanitarium.

100° F. during their stay in the hospital. Twenty-eight per cent gave a history of repeated attacks of pneumonia, and several of the unilateral cases showed röentgenological evidence of pneumonia in the contralateral lung. Eighty-six per cent had some form of upper respiratory infection such as very frequent head colds, clinical and x-ray evidence of paranasal sinusitis, chronic tonsillitis, or an unusual degree of carious teeth. Other more rare symptoms were choking attacks at night, orthopnea, dyspnea and severe coughing when exposed to cold air, emetic cough, cardiac palpitation, and nervousness. Four (10 per cent) had no sputum and are called dry bronchiectasis (bronchiectasis sicca). A typical case is as follows:

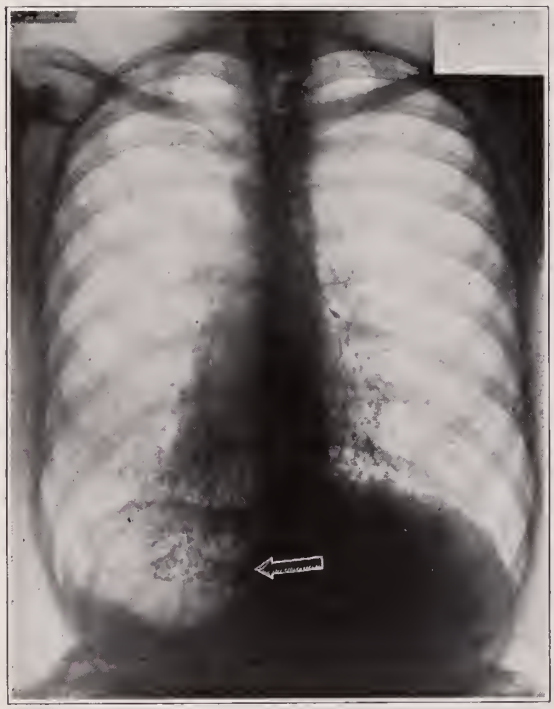

FIG. 1. Minimal bronchiectasis sicca. Arrow points to group of two diseased bronchi.

Case 1: A. K., white female, aged 52. Complained of cough and chest cold following a severe pulmonary hemorrhage 18 months previous to hospitalization. Her preadmission diagnosis was moderately advanced pulmonary tuberculosis. Physical examination showed a well developed woman with no abnormal physical findings, except for fine post-tussive râles at both lung bases posteriorly. There was no sputum on admission, but after postural drainage patient expectorated up to five cc. mucopurulent sputum, which was negative for tubercle bacilli. Stereoscopic röentgenograms of the chest revealed a dense infiltration on the right near the hilus. The left lung was clear. A lipiodol bronchogram showed saccular bronchiectasis at the base on the right, situated medially and posteriorly.

Duration of Symptoms: In correlating the duration of symptoms, *i. e.*, the time of onset to diagnosis, one finds that the duration of symptoms in the minimal cases is 1.7 years and in the moderately and far advanced cases 10.4 years.

Physical Signs: Physical examination of the chest was negative in seven of the 42 cases, all of the rest had râles over the diseased area; a few had, in addition to the râles, other signs such as dullness, tubular breath sounds, increased fremitus, etc. Extra pulmonic signs included malnutrition in 62 per cent and clubbed fingers in 28 per cent. The pulse rate was within normal limits. Average blood pressure was 119/76. One case with definite arteriosclerosis (B. P. 188/100) was omitted when computing this average.

Laboratory Findings: Routine urinalysis was normal in all cases except one and this showed unexplained albumin. Twenty tuberculin tests were performed, seven were negative and 12 were positive. One was negative on admission and positive on discharge seven months later.

Plain Radiography: The majority of the plain films showed some abnormalities that suggested the presence of disease. Five (12 per cent) showed no signs of pulmonary pathology. Six showed lower lobe atelectasis; three of these had a triangular shadow[1] at the lower border of the heart; two others showed upper lobe emphysema on the posterior anterior films, and the sixth showed evidence of atelectasis on the lateral film[2] by a difference in the heights of the anterior and posterior portions of the diaphragm. Thirty-six had basal infiltrations; 18 had suspicious honeycombing, and 13 had some form of pleural reaction, which includes thickened pleura, obliteration of one or both costophrenic angles, and flattened or tented diaphragm. Actual

visualization of bronchiectatic cavities were seen in only two cases, one of which came to autopsy, and in this case several of the suspected cavities were found to be localized areas of emphysema.

Diagnosis Not Evident by Plain X-ray Plates: In the past 18 months, 42 patients, all suspected of having bronchial pathology, either by history, physical findings, or x-ray, had negative bronchograms. The plain admission films of these 42 unselected patients are compared with the plain admission rays of the 42 positive bronchiectasis cases in the following table:

	Bronchiectasis	No Bronchiectasis*
Normal plates	5	17
Atelectasis	7	1
Infiltrations	36	13
Pleural reaction	23	10
Honeycombing	18	7

Bronchograms: The bronchogram showed unilateral involvement in 26 patients and bilateral in 16. The right side alone was involved in 12 and the left alone in 14. Forty of the 42 cases had lower lobe bronchiectasis and some of these had in addition the upper lobes involved. Two cases showed only the right middle lobe diseased. Practically all had a mixed type of bronchiectasis. Twenty-two were predominantly cylindrical, 16 predominantly saccular and four had an approximate equal distribution of cylindrical and saccular dilatations.

Diagnosis: The clinical history often is similar to that of tuberculosis, lung abscess, chronic bronchitis, and other lung pathology, and at times is inseparable from these. Bronchiectasis can occur with very few symptoms, without sputum and even without cough[3 4]. A large percentage have abnormal physical signs in the bases, but negative physical signs do not exclude the disease. The plain x-ray will usually rule out apical tuberculosis. In many instances the röentgenogram will be negative. Highly suggestive signs are frequent, but are very rarely diagnostic in themselves so that the actual diagnosis should be made by a bronchogram, lipiodol or brominol instillation by oral insufflation or through a bronchoscope.

After the bronchogram, one is often confronted with several pitfalls in diagnosis. It is sometimes difficult to tell whether a case is persistent chronic bronchitis (potential bronchiectasis) or whether actual dilatations are present[5]. When this happens, it is best to have another examination at some later date. Care must be exercised in interpreting lateral films, especially if the lateral diameter of the chest is great, because some of the bronchi are brought closer to the film than the regulation six feet and by distortion appear dilated. Bronchoscopic instillation at times is given under considerable pressure[6], which results in alveolar filling. Heavy doses of cocaine[7], which sometimes are necessary in this procedure, relax the bronchi and aid in this filling. If the x-rays pass through several groups of these filled alveoli, a bronchoscopic smudge is produced which simulates cavity. A considerable number of postmortem bronchographies checked by autopsy dissection have been performed at Hopemont[8], revealing that 25 to 50 per cent of the normal bronchi frequently do not fill with the opaque material. Previous postural drainage will help eliminate this pitfall. If the pus and sputum occupy the bronchial dilatation it is obvious that bronchography will be disappointing. Again it would be easy to miss a small area of bronchiectasis on one single examination, therefore it is emphasized that repeated examinations are often advisable.

Treatment: The treatment of bronchiectasis is medical and surgical.

The medical treatment consists of three principles: First, drainage: This may be accomplished by postural drainage (the patient lying over a bed or chair so that his chest is slanting downwards), or through a bronchoscope. Postural drainage should be performed two or three times daily. Failure to do this diligently may mean a plugging of

*The final diagnoses on these cases were: No pathology found, 12; non-specific pleurisy, 5; non-specific pneumonitis, 4; basal tuberculosis, 4; upper respiratory infection, 3; pneumoconiosis, 2; tonsillitis, 2; psychoneurosis, 2; hilum tuberculosis, 1; healed tuberculosis at base, 1; schizophrenia, 1; allergic cough, 1; dental caries, 1; lung abscess, 1; broncholithiasis, 1; and one case of blood dyscrasia.

the bronchus with the subsequent fever and toxicity because of entrapped pus, or may usher in a serious pneumonia. Use of a bronchoscope has in its favor the fact that obstructions such as granulation tissue, etc., can be removed and pus can be aspirated, which by postural drainage may be too thick. Jackson and Jackson[9] say that nature sets up a protective mechanism when the pus is too thick thinning it by putrefaction, but that the patient pays dearly for this protection because the by-products of this putrefaction irritate the bronchi, causing spread and progression. During bronchoscopy this thick pus can be removed before putrefaction sets in. The second principle in the medical treatment is prevention of upper respiratory infections as much as possible by avoiding exposure to dampness, cold, etc., and if an infection sets in it is advisable to overtreat by a long period in bed followed by a gradual convalescence. Third, elimination of foci of infection, by operative means if necessary, because sinusitis, chronic tonsillitis, otitis media, etc., are very possible contributory factors in causing extension.

Other measures that have been tried with varying success are lavage with disinfectants, non-specific vaccines, autogenous vaccines prepared from cultures of material removed with a bronchoscope, and frequent lipiodol instillations. Drug therapy is used only for symptomatic relief. It is wise to avoid drugs that will make the secretions thicker and drugs that unduly suppress cough.

Surgical collapse treatment, which has been so successful in tuberculosis, has been disappointing[10, 12] in bronchiectasis. This may be because these procedures (pneumothorax, phrenicectomy, and thoracoplasty) often obscure the draining bronchi, thereby preventing proper drainage which is so necessary. Again it has been suggested[11] that because the lumen of the bronchial dilatations are lined with epithelium, no amount of compression will cause fibrosis and healing. A partial pneumothorax can be a life-saving procedure in the face of a severe hemorrhage. The surgical treatment to be preferred is removal accomplished by means of a lobectomy or pneumonectomy. These procedures are radical and are accompanied by a high mortality rate. They are limited to selected cases, necessarily unilateral, although bilateral lobectomies[13] have been reported. The indications for surgical removal are severe but definite—repeated hemorrhage likely to endanger life, repeated attacks of pneumonia, and persistent offensive sputum.

The efficacy of medical treatment in effecting a cure is questionable. The inflammation in early cases may become quiescent and the dilatations may be lessened by a fibrotic constriction of the bronchial walls. Wall and Hoyle[4] describe two cases of bronchiectasis with röentgenological cure and quote another previously reported by Ochsner and Nesbit. To expect restoration of normal bronchial musculature and elastic tissue after destruction in advanced cases is unreasonable. The medical treatment for the advanced cases can only be palliative, but in some instances this seems to be adequate. On the other hand many people have been living useful lives for years in spite of their bronchiectasis. Rales and Todd[10] followed 106 cases of bronchiectasis tracing the progression of the disease. Some of their conclusions were that the cylindrical type will progress to sacculation under pneumothorax collapse; that the cavities do remain open in all collapse methods; that phrenic evulsion many times gives only temporary relief, and that medical treatment is ultimately ineffective. This strongly suggests that bronchiectasis untreated by surgical removal is a fatal disease. If further studies show this to be true, and if further advances in operative technique reduce the mortality rate, then the trend of the recognized treatment will be toward lobectomy immediately upon diagnosis, before the patient becomes too great a risk or the chance of cure too small because of extensive involvement.

Bronchiectasis in Pulmonary Tuberculosis: Bronchiectasis in pulmonary tuberculosis is of three types. The first type is bronchiectasis immediately surrounding or in the midst of

the tuberculous process as an integral part of the disease itself. In 50 autopsies done at Hopemont on far advanced cases, this type was always present. In tuberculosis the situation is ideal for the production of bronchiectasis. First we have infection weakening the walls of the bronchi, either by direct attack by the tubercle bacilli, or by the secondary infections which accompany all cases that are far advanced. Following this weakening, dilation is aided by various physical factors, namely: cough which increases intrabronchial pressures; atelectasis[14] which increases intrapleural pressure, which in turn is transmitted through the solid unyielding lung to the peribronchial tissues; fibrosis of the parenchyma pulling on the bronchial walls; obstructions and blocks which cause a much greater increase in intrabronchial pressure, especially during cough; and the weight of accumulated

FIG. 2. Moderately advanced bronchiectasis.

secretions. The second type is seen when both diseases exist in the same patient in separate portions of the lungs. It may be that the two conditions are coincidental or that the bronchiectasis came after the tuberculosis and its development was helped by secondary infection, decreased resistance, emphysema, etc. In 70 postmortem bronchographies 15 patients showed this type[8]. The third type is posttuberculous bronchiectasis[15], which means that the far advanced tuberculosis becomes healed but the bronchiectasis persists. The healing

FIG. 3. Far advanced bronchiectasis.

may take place spontaneously or with the aid of collapse therapy. All cases of arrested far advanced tuberculosis do not have posttuberculous bronchiectasis.

Three cases are reported in detail:

Case 2: R. P., a white female, aged 27, whose present illness began in 1921 with influenza followed by cough, expectoration, night sweats, and dyspnea. A diagnosis of pulmonary tuberculosis was made by x-ray and sputum examination in 1922. Admission to Hopemont was in 1928, six years later. At this time she had a cough and expectorated 30 to 100 cc. of purulent sputum a day, which was negative for tubercle bacilli. Plain admission films showed infiltration in the upper half of both lungs. Physical examination showed râles in these areas. Lipiodol instillation through a bronchoscope revealed saccular bilateral apical bronchiectasis. She was discharged in 1932.

Case 3: L. G., white male, aged 29, was admitted July, 1933, and diagnosed pulmonary tuber-

culosis, far advanced "C", involving the entire right lung with a five cm. cavity at the apex. He raised 30 to 40 cc. of positive sputum daily. A right pneumothorax was induced April, 1934, and a right phrenic crush was added in November of the same year. The cavity remained open because of adhe-

FIG. 4. Bilateral upper lobe bronchiectasis present after apparent healing of tuberculosis with resulting negative sputum. (See text, Case 2).

sions. In April, 1935, the chest was entered by means of a thorascope and the adhesions cut. The cavity closed with sputum conversion, but there was a persistence of 15 to 30 cc. of purulent expectoration. A lipiodol instillation showed minimal bronchiectasis in the right lower lobe.

Case 4: C. G., a white male, aged 40, was admitted November, 1923, with a history of cough, hemoptysis, pleurisy, and expectoration. Sputum contained numerous tubercle bacilli, and röentgenogram showed far advanced pulmonary tuberculosis of both apices. Patient was given routine sanatorium care. Improvement was gradual. The sputum became negative in 1927 and has been negative since. The patient now (1936) has 30 to 80 cc. of purulent sputum daily. Postural drainage has been tried without results. Patient finds that expectoration is easier when he is on moderate exercise. Whenever his exercise is decreased, especially by a prolonged stay in bed, the bronchi become plugged, his sputum decreases, and he shows signs of general toxicity. At these times his sputum has a foul odor. Hemoptysis occurs frequently. Cold air will often excite severe cough and dyspnea. Lipiodol bronchogram showed saccular bronchiectasis involving the upper half of both lungs.

The bronchogram in posttuberculous bronchiectasis shows the disease to be nearly always situated in the upper lobes, and to be predominantly saccular. The ectatic bronchi tend to be kinked and tortuous.

Persistent sputum in patients with apparently arrested pulmonary tuberculosis may come from four sources: (1) Tuberculous activity, which must be excluded by careful sputum examinations including cultures or guinea pig inoculations. (2) A drainage from the paranasal sinuses falling down into the

FIG. 5. Postmortem injection of tuberculous lungs. Bronchiectasis seen in right lower lobe distant from tuberculous disease, and in left upper lobe associated with tuberculous disease.

trachea during sleep and coughed up the next day. A careful check of the upper respiratory tract is necessary to rule this out. (3) Chronic bronchitis. (4) Posttuberculous bronchiectasis. Differential clinical diagnosis of these two latter conditions can frequently be made be-

cause the bronchiectasis symptoms are much more severe and more persistent.

Because of the previous destructive tuberculosis, the resulting fibrosis and emphysema, and the present bronchiectasis, many of these patients have a markedly decreased vital capacity, apparent by severe dyspnea and cyanosis, thus contraindicating a bronchogram. The diagnosis then must be made on clinical findings alone. Many of these patients have been encountered here at Hopemont, who have röentgenological and sputum evidence of arrest of their pulmonary tuberculosis, but with persistent mucopurulent expectoration. Occasionally such a patient will have a severe hemoptysis which does not necessarily mean reestablishment of activity, but may well be caused by the bronchiectasis.

The treatment of posttuberculous bronchiectasis is similar to the medical treatment outlined for general bronchiectasis. Moderate exercise is advisable. Postural drainage is often of great benefit, even though the disease is entirely in the upper part of the lungs because many times the draining bronchi are located above the pus-filled sacculations. Surgical removal of posttuberculous bronchiectasis, to our knowledge has not been attempted, although there is evidence that thoracoplastic collapse may be of benefit if the patient is suitable for operation[16].

Summary and Conclusions: 1. Forty-two cases of general bronchiectasis are presented.

2. The plain röentgenogram is rarely diagnostic.

3. The actual diagnosis should be made with a bronchogram, and if this is negative in the face of suspicious history and clinical findings, a repeat examination is advisable.

4. Medical and surgical treatments are discussed.

5. A classification of bronchiectasis in pulmonary tuberculosis is offered, and three cases of proven posttuberculous bronchiectasis are reported.

BIBLIOGRAPHY

1. Warner, W. P. and Duncan: *Lobar Atelectasis as a Cause of Triangular Roentgen Shadows in Bronchiectasis.* Arch. Int. Med. 52:888, Dec., 1933.

2. Overholt, R. H.: *Atelectatic Bronchiectasis.* Am. Rev. Tuberc. 31:121, Feb., 1935.

3. Fletcher, E.: *Bronchiectasis.* J. Thoracic Surg. 4:460, June, 1935.

4. Wall and Hoyle: *Observations on Dry Bronchiectasis.* Br. Med. J. 1:587, April 8, 1933.

5. Ochsner, A.: *An Unappreciated Cause of Chronic Bronchitis.* J. A. M. A., 93:188, July 20, 1929.

6. Hasley, C. K. and Hudson, W. A.: *Pitfalls in the X-ray Diagnosis of Bronchiectasis with Iodized Oil Injections.* J. Mich. State Med. Soc., 33:511, Sept., 1934.

7. Sante, L. R.: *Practical Observations on the Use of Iodized Oil in Bronchiectasis.* Am. J. Roentgenol. and Rad. Therapy, 32:763, Dec., 1934.

8. Salkin, D., Cadden, A. V., and McIndoe, R. B.: *Postmortem Bronchography.* To be published in the Am. Rev. Tuberc.

9. Jackson, C. and Jackson, C. L.: *The Bronchiectatic Septic Tank.* Am. Rev. Tuberc. XXX:599, December, 1934.

10. Rales, F. C., Todd, G. S.: *Bronchiectasis.* Br. Med. J. 2:639, Oct. 14, 1933.

11. Nelson, H. P.: *Collapse Therapy in Bronchiectasis.* Br. Med. J. 1:58, Jan. 13, 1934.

12. Oakley, W. G.: *Indications of Phrenic Evulsion in Bronchiectasis.* Br. Med. J. 2:378, Aug. 29, 1931.

13. Eloesser, Leo: *Bilateral Lobectomy.* Surg., Gynec. and Obst., 57:247, Aug., 1933.

14. Warner, W. B.: *Factors Causing Bronchiectasis.* J. A. M. A. 105:1666, Nov. 23, 1935.

15. Newman, R.: *Upper Lobe Bronchiectasis.* Am. J. Med. Sc. 186:650, Nov. 1933.

16. Cabett, H. L., Singer, J. J. and Graham, E.: *Bronchography Following Thoracoplasty for Tuberculosis.* J. Thoracic Surg., 5:259, Feb., 1936.

AID IN EMERGENCY

If every mother were equipped to render competent first aid in cases of emergency and were capable of giving the expert nursing care that most doctors' orders require, fewer accidents would result in death and fewer childhood diseases would be followed by lingering illness.

To counteract this, Regina J. Woody explains the most common of the physician's telephoned specifications in an article, "How to Follow the Doctor's Orders," in the July *Hygeia.*

If there is reason to believe a member of the family is ill, the first thing to do is ascertain the temperature. This bit of information means much to the doctor.

If he prescribes anything unusual or new to the child, it should be demonstrated on some one else first. The known has few terrors; it is the unknown that unnerves the little patient.

If disagreeable medicine must be taken do not force it. It is also safer not to try and disguise it. Sometimes castor oil taken in orange juice will cause a lasting hatred of this beneficial drink. First give the castor oil and then the orange juice to cut the oily flavor.

ELLIOTT TREATMENT IN PELVIC INFECTIONS*

By A. MORGAN DEARMAN, M. D.
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THE use of heat in the treatment of human ailments is probably as ancient as any present remedy still in vogue. Accepted treatments are almost as changeable as styles of ladies wearing apparel. Books are soon out of date and unless we read current medical journals we may miss many new and important improvements in treatment. Some of these new scientific achievements are old ones revived as cod liver oil, or hormones which were in indefinite amounts, condemned glandular extracts for oral administration and now purified and accepted as theelol.

Physicians for many years have used hot douches in treatment of pelvic infections. This was given at 110 or 112 degrees for but a few minutes, one to three times a day. During the past decade diathermy was claimed by many as important as these same temperatures could be maintained for a longer period of time.

The next advance was the Elliott Treatment by which method temperatures of 130 degrees are given. It seems logical that if a douche of 110 degrees for a few minutes was of value, this should be more useful. A still more recent advancement in heat therapy is the Kettering Hypertherm. Enthusiastic reports recently appeared in *Mayo Clinic Bulletin* and *The American Medical Association Journal* (December 20, 1935). The use of the Kettering Hypertherm seems limited to gonorrhea and syphilis and although apparently a safer method of fever therapy than malaria and diathermy it is still not a simple office procedure. It may be developed and used extensively for venereal diseases but it seems incapable of being used in the many cases of abortal, puerperal and chronic infections which are greatly benefited by the Elliott Treatment.

My experience is based on 1262 treatments given 89 patients in the last twenty months. None of these patients have been injured by treatment. Beneficial treatment may be given at 125 degrees without pain, except in an acute and tender pelvis they are rather uncomfortable from pressure. At this temperature vaginal mucosa is unaffected. If the temperature is 130 degrees, several may show some vaginal irritations which might look bad to one not accustomed to seeing them, but are very superficial and within one or two weeks disappear if treatments are stopped or continued at temperature of 125 degrees.

Criticism has been offered that improvement in acute cases is largely due to rest in bed as most of the early reports were on hospital cases at complete rest. My experience seems to condemn this censure as of the 1262 treatments, all have been given at the office, except 40 given at the hospitals. Patients with high fever unable to walk were carried in for a few days and with one exception have had normal temperature within one week, usually three to five days. The exception is a puerperal infection with large abscesses which is still under treatment.

In the cases I designated cured, I must grant possibilities of later complications, but in using the term I am taking the patient's word that she thinks she is well and by vaginal examination I find no contrary evidence. Some few treated cases I have later operated upon and have seen operated upon by fellow surgeons for misplacements and repairs, but insofar as I know the infection had subsided. Some of the others are still in need of plastic surgery. One case continued to get worse and what I had

*Read before the Academy of Medicine of Parkersburg on January 9, 1936.

thought was a pelvic abscess became larger and very painful. Mistaken diagnosis of infection was revealed by laporotomy and a very large cyst of the ovary and broad ligament was removed. Infection was suspected as it developed gradually after a pelvic operation five months previously.

Improvement is rapid and gratifying in acute cases. Chronic cases, while greatly improved, are frequently not quite so completely satisfied, since not being so ill, improvement is not markedly manifest and due to complications other than infection, they are not entirely relieved.

Irregular menstruation, if no other pathology is present, is usually improved. Dysmenorrhea has been invariably relieved for a few following menses, but in most cases recurs within a few months and I do not recommend treatment for dysmenorrhea unless complicated by infection.

I have not classified the etiology. Only one of the acute cases was positive for gonorrhea and she had recently had an abortion. Approximately one-fourth of the chronic cases were positive for gonorrhea. All of these that I later checked became negative. All chronic cases with marked endocervicitis were treated with electrocoagulation or cautery as early experience showed that Elliott Treatment would not cure marked erosions with granulation tissue.

I was unable to contact some treated cases to ascertain their present condition and I will not include in this report those whom I have not seen for a long time and others which took a few treatments and quit. This report covers 70 cases, 17 acute and 53 chronic. Of the 17 acute cases, seven were cured, nine improved, and one unimproved. Of the 53 chronic cases, 26 were cured, 24 improved, and three were unimproved.

Previous to the time I started the Elliott Treatment, most of these patients I would have advised to be operated upon. Results seem fully as good or better and treatment is much less confining and expensive. Most of them were young women and still have possibilities of becoming mothers, which many appreciate. There were no deaths and with this number of acute cases mostly postabortal, with two puerperal, it is doubtful if all would have recovered without Elliott Treatment.

Acute cases averaged 23 treatments, and chronic cases averaged 15 treatments.

Conclusions: 1. Elloitt Treatment in my opinion is the greatest advancement in gynecological treatment since the advent of surgery.

2. Therapeutic value is pronounced and soon evident in acute cases.

3. Improvement is not due to rest and hospitalization as all acute cases after three to six treatments were treated at the office and were ambulatory usually within one week without relapse due to such movements.

FRUSTRATION OF DESIRES

A child misbehaves in order to attain an object or as a protest against some injustice, according to Dr. Morris Gleich in "The Preschool Child Who Misbehaves" appearing in the July *Hygeia.*

Most cases of misbehavior develop because of neglect of attention to details. Some parents insist that children outgrow their early bad habits. This is untrue. Witness our reformatories full of children who were allowed to grow up without guidance, in fact without parents.

Striking or frightening children into good behavior is another policy pursued by some parents. Such methods are indications of their inability to raise children properly.

Many problems arise at mealtimes. The refusal to eat is bound up with feeding habits, nutritional requirements and esthetic, psychologic and medical aspects of foods. Eating when hot, tired or excited is bad. A rest before and after meals, regular eating periods and no food between meals are most essential items.

One pint of milk a day, after the first year, is sufficient. Milk does not contain all the elements necessary for growth and development after the first year. The mother who is thankful because her child takes plenty of milk, to the exclusion of other foods, will soon find that the child becomes pale and flabby, with a distended abdomen and no appetite. Too much milk takes away the desire for other foods. It thus deprives the child of minerals, vitamins and forms of protein needed by him.

SURGICAL AIDS IN MEDICAL VASCULAR CONDITIONS*

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UNTIL recent years the approach to cure, or even relief of primary conditions involving the heart or blood vessels by any surgical procedure was relatively unheard of. During the past few years, however, many surgical developments have been advocated and clinically tested for certain particular lesions of the cardiovascular system and it is my purpose to speak briefly of a few of these, illustrated by case reports. There will be no attempt to discuss all surgical measures that have been advised, but to select these few and consider them briefly.

The surgical procedures for the relief of angina pectoris and other related cardiac conditions have received a great deal of attention. The most popular approach at first was an attack on the cervical sympathetic nervous system in which resection of part or all of the known cardiac nerves in the cervical area, consisting chiefly of the superior, middle and inferior cervical sympathetic ganglia and their cardiac branches was advised. These operations were popularized by Jonnesco, Leriche, Hofer, Coffey, Brown and others. Any of the advocated operations require extensive, specialized and prolonged surgery on known cardiacs and none has given uniformly successful relief of the pain of angina, hence it is fair to conclude that except in the most extraordinary cases cervical sympathectomy should not be practiced.

J. C. White of Boston, later proved by experimental and clinical evidence that the thoracic ganglia, particularly the second, third, fourth and fifth, have direct connection with the heart and are probably afferent sensory pathways and concluded their abolition would terminate anginal pain. He, therefore, injected clinically these ganglia with 80 per cent alcohol in twenty-eight cases of severe angina whose pain was uncontrollable by other measures. Fifty-seven per cent were entirely relieved of pain, twenty-three per cent greatly benefited and only eleven per cent failures. He feels certain that the failures were due to improper, or inadequate, alcoholic injection. The paravertebral alcoholic injection is difficult technically, but is a relatively harmless operation except for some residual intercostal pain. Of course the procedure should not be attempted until all conservative measures have failed and the pain of angina is intractable.

Case Report: Mr. J. J. F., aged 65, white male, first seen in 1926. Had been suffering with chest pain after effort for about two years. The pain was associated with exercise and at times he would go several weeks without severe attacks. About September, 1928, he began to be decidedly worse and was soon incapacitated; severe anginal discomfort being precipitated by the slightest effort, such as walking across a room. Walking up five or six steps would produce violent pain and marked dyspnea. He had true angina pectoris with atherosclerosis and marked cardiac hypertrophy due to hypertensive heart disease. His pressure ranged from 180 to 210 systolic and from 90 to 110 diastolic.

After all conservative measures had failed, a paravertebral alcoholic injection of 80 per cent alcohol was done in the region of the second, third, fourth and fifth thoracic ganglia by Dr. D. S. Daniel at the Johnston-Willis Hospital on June 13, 1929. The patient complained of immediate pain at the site of the injection which radiated to the precordium. He suffered rather intensely from a pain resembling intercostal neuralgia for two days and morphine was required for relief. Immediately upon the resumption of his former activities he noticed no return of pain. He soon found that he could walk farther and even up a flight of steps

*Read before the Cabell County Medical Society, Huntington, W. Va., April 9, 1936.

without producing angina. As a matter of fact, he did not have any attacks of consequence for twelve months after the injection. He remained in fair cardiac compensation for two more years and then his angina returned, together with evidence of cardiac failure. He died five years after the treatment for his angina. His pain was relieved, but his pathology was not changed. His life was rendered more comfortable for at least three years and it is probable his life span was lengthened thereby.

During the past few years much work has been done on the relationship of metabolism to cardiac effort. In an attempt to reduce to an absolute minimum cardiac work, total removal of the thyroid gland has been advocated and performed in numerous cases. The trial period has proved it a step forward in handling certain advanced cardiac cases. The procedure is suggested for the relief of pain in certain intractable cases of angina pectoris and for selected cases of congestive heart failure.

A recent report by D. D. Berlin of Boston, who has probably performed more of these operations than any other investigator, shows that 70 per cent of the patients with either angina pectoris or congestive heart failure who were operated on from one to two and one-half years ago, have shown marked or moderate improvement following total ablation of the thyroid gland. The operative mortality in his hands has been exceedingly low and in the past sixty-two cases there has been no mortality directly due to surgery. The improvement noted has paralleled in the long run the fall in the metabolic rate and this is the probable accurate explanation of the benefit received. These thyroidectomized patients remain in a state of hypothyroidism, which according to its advocates, is most desirable. A thorough understanding of the true pathology and of the exact circulatory state as well as knowledge of existing complications which may be contraindications, must be known before operation is even considered.

I am, however, reporting now a case upon whom total ablation of the thyroid gland was performed in full knowledge of an existing hypertension with advanced arteriosclerosis, vascular and parenchymal kidney changes and tertiary lues. These complications are considered contraindications for total thyroidectomy, it being primarily for relief of bona fide heart disease. But in consideration of the patient's total invalidism and constant dyspnea and uncontrollable anginal pain, radical relief was attempted.

Case Report: Mr. R. R. F., male, aged 63 years, conductor on C. & O. Railway for many years. Was first seen by me in December, 1933. At that time his chief complaint was dyspnea on effort. After climbing one flight of stairs he would be breathless and would be forced to stop. This had been progressively becoming worse to the extent that he could not continue his work as a railroad conductor. Dyspnea while in bed became marked, until soon he could not rest except on three or four pillows. Study indicated that the patient had a basic vascular disease with definite generalized sclerosis, with a leutic background. The effect of these was now an advanced hypertension with evident hypertensive heart disease approaching failure, together with marked vascular and parenchymal kidney damage. A complete rest regime with antileutic treatment in the form of bismuth and mercury, together with digitalis and sedatives, were continued for several months. Even with these, his symptoms became progressively worse. The dyspnea required morphine for relief at night and often during the day, until he begged constantly for relief. He presented no evidences of circulatory failure except posterior râles were found at the base of both lungs. His liver was never enlarged, nor was there any peripheral edema. His basal metabolic rate was minus three. His cardiac impulse was in the sixth interspace in the axillary line. There was no significant arhythmai. Under sodium pentobarbital and local anesthesia, a complete thyroidectomy was performed on him by Dr. A. L. Herring on June 2, 1934. The operation consumed only about twenty-five minutes. There were no unusual postoperative symptoms, his operative convalescence being extremely smooth. About the third or fourth day postoperatively breathing was more comfortable, and his dyspnea was almost entirely relieved in about three weeks. His basal metabolic rate dropped to minus forty. He remained free from cardiac symptoms and was soon able to be about without dyspnea or pain. Several months after operation ascites developed and it was necessary to perform abdominal paracentesis at fre-

quent intervals. It was felt at first that this was due to glomerular nephritis or to possible cirrhosis of the liver. When satisfied that the ascites was not nephritic in origin and failing to find any mention of its occurrence following surgery on the thyroid gland, an exploratory laparotomy was done on April 19, 1935, 10 months after the thyroidectomy, and an omentopexy, together with a splenectomy was performed. The spleen was found to be about twice the size of a normal organ and after much consideration was removed. The liver appeared grossly normal though slightly undersized and probably more firm than usual. No section was removed for biopsy. Recovery from the laparotomy was uneventful, although fluid soon reaccumulated in the peritoneal cavity and paracentesis was necessary again. The patient was tapped at frequent intervals until his death in October, 1935, six months after the last operation, 16 months after the original. During the entire time that has elapsed since the total ablation of the thyroid he was almost completely relieved of precordial pain and of dyspnea, except when marked ascites caused increased intraabdominal pressure.

The rationale of total thyroidectomy seems to rest on the fact that in myxedema the velocity of the blood flow is lessened. Remembering that there is a depression of blood flow in patients with cardiac failure, it was felt that if the tissue demands could be lessened, then the inadequate blood flow might be able to meet the lessened demands and on this basis Blumgart and his co-workers lowered the body metabolism (tissue demands) by absolute complete removal of the thyroid gland. It is essential, of course, that conservative measures to reduce body metabolism be thoroughly exhausted before radical surgery is attempted. Complete bed rest, with all other conditions approaching minimal activities, together with submaintenance diet, with daily caloric intake as low as 800 calories, will cause lowering of metabolism in many cardiacs and often will affect relief probably as lasting as that claimed by the advocates of total thyroidectomy.

Due to mechanical interference with the cardiac impact, certain heart conditions require decompression of the surrounding structures to allow adequate expansion of the cardiac musculature during systole. This has been advocated particularly in chronic adhesive pericarditis such as that found in Pick's disease and in which removal of portions of the surrounding chest wall, together with the adherent pericardium, has been done with success in some cases. I wish to report now a case of a girl twenty years of age, first seen by me in 1927:

Case Report: Since that time she has been a cardiac invalid. She had rheumatic fever with associated heart disease causing a tremendous cardiac hypertrophy, particularly left ventricular. The apical impulse was booming and heaving and extremely forceful. During 1927, 1928 and 1929 she was able to be about in the house with occasional periods in bed to restore compensation. In 1930 and 1931 she spent most of her time confined to bed with noticeable progression of her cardiac signs and symptoms. Then her compensation was better adjusted and for one year she returned to her school with very limited exercises. It was observed then that there was a noticeable spread of the intercostal spaces on the left side, together with a forward bulging of the left anterior chest. It appeared likely that the cardiac impulse was affecting a spontaneous decompression at that time. The apparent deformity probably due to increased cardiac size. During 1934 she was completely confined and for nine months during 1935 she was apneic; it being necessary for her to sit erect or bend forward over pillows in order to rest at all. Opiates were necessary at regular intervals. There was a marked enlargement of the liver and peripheral edema, an intractable cough and nausea. She had lost much weight until the edema appeared. On September 3, 1935 a teleoröentgenogram revealed the following measurements:

Right side of heart	7.5 cm.
Left side of heart	12.3 cm.
Total heart diameter	19.8 cm.
One-half chest diameter	13.0 cm.
Difference	6.8 cm.

"This indicates that the heart is 6.8 cm. larger than normal. The heart is 'waterbag' in shape and presents the usual characteristics of pericarditis with effusion."

On September 5, two days after the röentgen ray study at the Sheltering Arms Hospital, partial thoracoplasty was performed, sections of the sixth and seventh ribs about five cms. in length, were re-

moved over the area of greatest cardiac impact, including part of the costal cartilages. Her pleura and pericardium were not entered. This was done under avertin and local anesthesia by Drs. Johns and Daniel. There was no unfavorable postoperative reaction. Within two days the patient was able to sleep on three pillows without any sedatives. Her edema had virtually disappeared in five days after operation and in one week all dyspnea had about gone. Röentgen ray of the chest on September 13, eight days after the operation, revealed:

Right side of the heart	7.0 cm.
Left side of the heart	10.5 cm.
Total diameter of heart	17.5 cm.
One-half of chest diameter	13.0 cm.
Difference	4.5 cm.

"This indicated that the total diameter of the heart has heen materially reduced since the previous examination, but is still large and shows the general characteristics of pericardial effusion."

She remained comfortable for about ninety days, then cardiac irregularity with difficult breathing was noted again. Later edema and heart failure were evident and the patient died a cardiac death six months after the thoracic decompression. The reduction in the transverse diameter of the heart and the immediate restoration of cardiac compensation occurred after the fixed thoracic cage was made more expansihle and each heaving ventricular impulse not as restricted as previously. It is likely that this explains the reduction in cardiac size. The life of this patient was made more comfortable and probahly prolonged by a simple surgical procedure.

I will present now the unusual case of a white man 35 years of age, a supervisor of an oil plant, with a history of prolonged fever of exactly seven months' duration:

Case Report: His illness began insidiously with headache, malaise and fever. The only point of interest in his past history was that at 18 years of age he accidentally shot himself in the right thigh, the bullet penetrating the ahdomen just ahove Pourpart's ligament. He bled profusely from the wound and was operated upon in Richmond at which time he was told that the hullet had torn a hole in the two large hlood vessels which supplied the right leg with circulation and had established a communication hetween them. He recovered completely from this accident and had had no trouble since. The present illness, characterized chiefly by fever which persisted from July, 1924 to January, 1935, had the following salient significant findings: Loss of weight; a pallor; definite enlargement of the liver and spleen; tachycardia and the presence of an arteriovenous aneurysm, probably of the right iliac vessels. Occult blood was found several times in the stools. Many repeated blood studies showed leukocytosis and no other findings of note save a mild secondary anemia. All other findings were essentially normal. Agglutination tests, blood cultures, smears and serological findings were not significant. His temperature range was from 99 to 102. Occasionally he would be free one day from fever. He had no pain or local discomfort. After thirteen blood culture reports were negative, these being checked in many different lahoratories because it was felt that the diagnosis was probahly a form of chronic sepsis, in January, 1935, streptococcus viridans was found in the blood stream, about 28 colonies to one cc. of blood. Two other successive blood cultures were also positive for streptococcus viridans. These findings were found at the Johns Hopkins Hospital. It was concluded by Dr. Lewis Hamman, who was then in charge of the patient, that he had a streptococcus viridans septicemia; the causative factor heing unknown. But as it is customary to associate the finding of this hacterium in the hlood stream with suhacute bacterial endocarditis, it was first thought that the patient must have an endocardial infection with vegetations. Repeated examinations disclosed no evidences of any form of heart disease. In that chronic streptococcus viridans septicemia has always been associated with endocardial infection that is subacute bacterial endocarditis at the Hopkins Hospital, it was presumed that in the arteriovenous aneurysm there might be vegetations infected with streptococcus viridans which were constantly feeding the blood stream. In view of this, it was decided after much deliheration, to attempt removal of this traumatic aneurysm and in February, 1935, Dr. William Rienhoff removed the entire mass. This, of course, was a tremendous surgical procedure in view of the patient's condition and the technical difficulties of the operation. The patient reacted satisfactorily following the operation and his temperature dropped within twelve hours to normal and has remained practically within the normal zone since that time. Much apprehension was experienced fearing possible gangrene of the right leg as the result of severing its chief hlood supply. For two or three days there were small areas of diminished circulation, manifested by hluish black discoloration. These disappeared shortly; the

patient was ambulatory in three weeks and returned to his work in sixty days.

Comment: The diagnosis of this condition should probably be subacute bacterial endoarteritis. Due credit for the diagnosis and management of this patient must be given to Dr. Lewis Hamman and his associates.

This case report throws some light on several important medical phenomena: First, that vegetations similar to those found on the cardiac valve leaflets may occur in the intima of the blood vessels; and second, that they may be the seat of streptococcus viridans infection and thereby septicemia.

During the past few years evidence has been more convincing that septicemia is due to a focal infected area within the vascular system from which the bacteria are swept into the circulating blood. This individual case would seem to indicate the correctness of this contention and to emphasize that thrombophlebitis and other lesions within the vascular channels are the probable causes of septicemia.

Recently Dr. J. M. Whitfield reported a case of puerperal sepsis in which there was a rather large palpable mass in the right lower quadrant. The patient came to autopsy and the mass was found to have been a massive thrombophlebitis of the ovarian vein. It is probable that her septicemia was due to organisms entering the circulating blood from this infected area within the ovarian vein. Furthermore, it is likely that radical removal of that particular area of the vascular system (the ovarian vein) would have resulted in a cure of the sepsis.

Surgery of the sympathetic nervous system for the relief of certain conditions of the vascular system is now in an interesting experimental stage. For some years sympathectomy has been advised for Raynaud's disease and the results have seemed to justify the operation. At other times the benefit received is questionable. Suffice it to say that in intractable Raynaud's disease not amenable to conservative treatment over an extended length of time, a lumbar sympathectomy may be tried as a means of obtaining relief.

Recently a great deal of attention has been focused on the possible relief of long standing hypertension by sympathetic nervous system surgery. It is needless to emphasize that any medical or surgical venture which offers any assistance in the management of the more severe cases of hypertension will receive concentrated attention from surgeons and internists alike. Many excellent surgeons have recently reported favorable results with section of the sympathetic ganglia in certain cases of intractable hypertension. Peet, Adson and others have concluded that their results justify the conclusion that splanchnic resection does offer a very definite step in the control and probable cure of certain cases of the more severe forms of hypertension. It is generally agreed that moderately advanced hypertension of short duration in the younger patients offers more favorable outlook from nerve resection than the slowly advancing or stationary type of high blood pressure. All more conservative measures must have failed before operation is indicated.

Peet has recently analyzed 126 cases on whom he had performed splanchnic resection; that is, the removal of the greater and lesser splanchnic nerves. Of this group eleven had been cured after one year.

E. V. Allen and Adson have emphasized that best results will be had in the malignant form of hypertension in which vascular degeneration is quickly progressive.

All are in agreement that there are, however, no criteria for the selection of the cases which may be benefited by nerve surgery.

Case Report: Mr. R. W. M., aged 38, white male, railroad engineer. Had been observed since June of 1933 as an ambulatory patient with a moderately severe and constant hypertension. He had an intractable headache for one year previous to his first visit and this headache has continued until recently. The only significant finding adequately to explain his headache has been hypertension. His pressure when first seen, was: Systolic, from 165 to 185, and diastolic from 105 to 115. The remainder of his examination showed no particular changes except dental caries which was immediately remedied. All the advocated medical armamentarium that has

been advised in the care of hypertension had been tried on him but with no benefit. The patient's headache continued, his hypertension increased and he would be forced to accept a furlough from duty several weeks each year on account of it.

In June of 1935, the patient struck the back of his head while operating his engine. He was dazed, but able to continue at his post. Upon awakening next morning he was practically blind. He could discern light, gross figures and motion. This condition improved during the day and in several days he could move about and see smaller objects, although he was unable to read. Careful ophthalmological examination revealed no evidences of choked discs and no changes in his retina not seen on previous examinations. His hypertension was more elevated than usual, being 218/130. While at first we felt he might have had a meningioma, it was concluded that he probably had a vascular accident in the region of the optic chiasm. After one week's rest with careful charting of blood pressure reading at frequent intervals, the reading ranging from 200 systolic to 230 and from 130 to 150 diastolic, a resection of the splanchnic nerves on the left side was done July 14 by Dr. C. C. Coleman at the Memorial Hospital in Richmond. The greater and lesser splanchnic nerves were resected. After the operation the patient was free from headache for the first time in weeks and he remained free for about three weeks. During that time his systolic blood pressure level was around 165 and diastolic about 110. Later, however, the headache returned and his blood pressure rose again, but not to the former maximum level.

On September 13, a resection of his right greater and lesser splanchnic nerves was done by Dr. Coleman. Since that time the patient has had only slight headache. The blood pressure level ranges systolic from 160 to 200; diastolic from 100 to 115. His general sense of well being is good and he is able to continue his occupation as a railroad engineer.

As you will immediately infer, the operation has been entirely too recent for any accurate conclusion to be drawn as to its effect. I am of the opinion that it has materially benefited him even now. Time and experience and the reports from many such operations will be factors that will allow us to evaluate the sanity of these surgical attacks on the sympathetic nervous system.

Formerly diseases of the heart and blood vessels offered a distinct contraindication for most forms of surgery. Today, contrary-wise, the profession is more keenly appreciative of the possible help of surgery for the relief of cardiac or vascular conditions by specific approach to the site of the pathology in the vascular system, as well as by surgical correction of pathological states which indirectly disturb the efficiency of an already damaged circulation. Stengle and many other observers have emphasized the rôle that upper abdominal pathology, as cholecystitis, et cetera, may exert in aggravating symptoms and signs due to coronary, myocardial or endocardial disease and have advised surgical removal of the abdominal pathology when practical.

Case Report: Four years ago, a white male, B. D., aged 43, while running to board a street car, was seized with a sudden and violent precordial pain. He had what appeared to be angina pectoris. Even after extended bed rest and conservative living, many similar attacks followed. These were usually relieved by nitroglycerine, but always disappeared when recumbency was resorted to. After one of these seizures there was marked abdominal distension and vomiting and later röentgen ray studies of the gastrointestinal tract disclosed a partial obstruction in the lower ileum. A laparotomy was performed and a section of the ileum about eight inches long was removed, the diameter of which had been reduced to about one-half inch. The pathology was chronic inflammatory tissue with much fibrosis and was probably caused by a solitary ulcer of the ileum, recently described by P. W. Brown. Since the surgical removal of the abdominal pathology, now over three and one-half years ago, the patient has experienced no further anginoid seizures.

The realm of surgical usefulness is being rapidly extended so that today we may feel that many of our formerly considered intractable disorders may be benefited by sane and capable surgery.

CORRECT SKIN CARE

The proper diet for securing the best results in the care of the skin is a simple, wholesome and balanced diet, according to Dr. Everett C. Fox, author of "The Care of the Skin" appearing in the July *Hygeia*.

HELIOTHERAPY IN THE TREATMENT OF TUBERCULOSIS*

By CLARENCE L. HYDE, M. D.
Edward Shaw Sanatorium
Akron, Ohio

THE sun has been radiating light upon the surface of the earth for millions of years. Whether we agree with the fundamentalist that it was created as the light most suitable for the needs of man, or agree with the evolutionist that vegetable and animal life have adapted themselves to the sun's rays over countless periods of time, the same conclusion must be reached—that sunlight is necessary for the well-being of man as well as for all forms of organic life on the surface of the earth.

History records that the value of sunlight has been appreciated by man since earliest time. Many ancient peoples diefied the sun and erected temples of sun worship. Physicians of the classical period of history prescribed heliotherapy for both prophylaxis and treatment. The Greeks and Romans commonly took sun baths, as evidenced by the remains of solaria found in their homes and the records of such eminent citizens as Celsus, Galen, and Cicero.

During the Middle Ages heliotherapy fell into disuse and its value was forgotten. A few attempts were made to treat disease with sunlight during the eighteenth and nineteenth centuries. However, it was not until the latter part of the nineteenth century that any progress was made in the treatment of disease with light.

Curiously enough the first systematic study which led to the modern application of light was started at Copenhagen, where during certain seasons of the year little sunlight is available. Here, in 1893, N. R. Finsen experimenting with the various portions of the sun's spectrum demonstrated that the violet and ultraviolet rays had an entirely different effect from that of the yellow and red. He showed that the rays of the ultraviolet portion are chemical in character and have a stimulating as well as a destructive action; that they have a particular function in the promotion of life and energy in the animal body, and a destructive action upon bacteria. He first worked with sunlight. Later, owing to the short period when sunlight is available at certain seasons of the year at Copenhagen, he resorted to the use of the carbon arc.

Finsen treated the whole body with both sunlight and light from the carbon arc but his results from the general light baths did not attract much attention. His most prominent contribution to therapeutics was the development of the carbon arc for the local treatment of lupus and demonstrating the curative action of the violet and ultraviolet radiation for treatment of diseases of the skin.

The followers of Finsen use the radiations from the carbon arc over the whole body for the treatment of all forms of extrapulmonary tuberculosis as well as diseases of the skin. They insist that the light must be given in a dose sufficiently strong to secure erythema, or a mild burn.

Dr. A. Rollier in 1903 began his studies on the effect of light in cases of so-called surgical tuberculosis in a climate more favorable for utilizing the sun's rays. Guided by altitude and the number of days of available sunshine, he selected Leysin in the Swiss Alps at an altitude of 5,000 feet as a place suitable for his purpose. A high, dry climate at this time was considered one of the necessary factors in the cure of pulmonary tuberculosis and he wished to place patients weakened and diseased from other forms of tuberculosis in a climate as

*Read before the joint meeting of the Monongalia County Medical Society, and the West Virginia Tuberculosis and Health Association at Morgantown on September 5, 1935.

favorable as possible for their reconstruction.

Rollier, a pupil of the celebrated surgeon Kocher, had seen tuberculosis of the bones, joints, peritoneum, etc., treated surgically by men preeminent in the profession of that time and he was disappointed in the results of operations. He became convinced that they were really not subjects for surgical measures, but that these forms were merely local manifestations of the disease in a body ill with the disease tuberculosis, and as such demanded treatment of the constitutional disease rather than its local manifestations.

Rollier's methods differed from Finsen's in that he tried to prevent any marked reaction in local areas of disease. Keeping the lesions covered, he gradually and progressively exposed the rest of the body to the direct rays of the sun. After the exposures had been worked up to a substantial period, and if there had been no local reaction or ill effect, he then proceeded very carefully to expose the lesion.

He found that by giving the sun baths with constitutional rest, proper food, and a life in the open air, and by using mechanical appliances necessary to rest local areas of disease, he was able to reduce the necessity for surgical intervention to a minimum and to give his patients quicker and more reliable cures.

To Finsen and Rollier is due the credit for stirring up the present interest in light and sun baths and placing the treatment on a firm foundation. Finsen has been called the "Father of Modern Phototherapy" and Rollier the "High Priest of Modern Sun Worshippers." They have approached the subject from different points of view, thus two methods have developed in the utilization of light as a therapeutic agent.

One group following Finsen utilizes artificial light extensively, emphasizes the action of the ultraviolet for both its local and general effect, and aims to secure a mild erythema after each general bath.

The other group following Rollier, while recognizing the value of the ultraviolet, argues for the whole spectrum as found in the radiation from the sun in the altitude. They endeavor to avoid all immediate reaction both local and constitutional, to avoid erythema and burning, but to gradually produce a deep tan. The lesion is protected at first and exposed only after the whole body has been adapted to the sun and air bath.

The Finsen Institute claims that general light baths with the carbon arc are as effective as sunlight. Rollier insists that no artificial light has been devised which will give results comparable with sunlight in the altitude.

The two main sources of artificial light which are used in conjunction with heliotherapy or substituted for sunlight are the quartz-mercury arc and the carbon arc.

There are two types of air cooled quartz-mercury arcs used for the radiation of the whole body, one having a solid tungsten anode and the other a liquid mercury anode. There is little difference in the light emitted from the two lamps except that the incandescence of the tungsten anode of the one gives more of the longer wave lengths than the other. These longer wave lengths, however, are of low temperature and cannot penetrate deeply enough to add to the value of the light.

The radiations from either of these lamps is in no way comparable with sunlight, as they are entirely different in their spectral distribution and energy.

The lamps are clean, easily movable, simple to operate, and do not require special wiring. Their simplicity is a disadvantage, for it has led to their being unwisely used.

The carbon arc can be made to emit radiation which more closely resembles the sun's spectrum than any other type. The most efficient type of the high pressure arc such as used in the motion picture industry. The disadvantage of this lamp is that it is complicated and expensive to operate. The J. N. Adam Memorial Hospital at Perrysburg, New York, is the only institution which utilizes this type of lamp for therapeutic purposes.

The open flame carbon arc burning cerium cored or copper cored carbons is the type of lamp generally used for radiating the whole

body in the treatment of tuberculosis. The light emitted from cerium carbons resembles sunlight more closely than the quartz-mercury arc. Yet it differs from the sun in many respects. It contains too much of the short ultraviolet not found in sunlight and a disproportionate amount of the other regions of the spectrum.

A number of types of carbon arcs are available. There is practically no difference in the light emitted, providing they use the same type of current, work on the same amperage, and use the same size and type of carbons.

A marked change occurs with increasing amperages, direct or alternating current, and differences in the sizes and types of carbons.

The various lamps differ in their mechanical devices for adjusting the arcs and reflectors. Some are more economical in the use of current or have a steadier flame than others. The most economical lamps are those operating on 25 to 45 amperes, 110 volt direct current. The carbon arc cannot be operated on the ordinary light circuit unless it operates at eight to 12 amperes and then it is ineffective therapeutically. The carbon arc must therefore remain more or less stationary. It should be placed in well ventilated rooms or have some device for ventilation to carry off the heat and products of combustion. Both the quartz-mercury arc and the carbon arc lamps have a therapeutic value if the radiations are applied with sound knowledge and judgment.

Most of the physicians who have treated tuberculosis with general sun baths agree that the sun is a much more effective source of therapeutic radiation than any artificial source of light. No lamp has been devised which will give radiation of the quality and intensity of the sun's spectrum in either the altitude or lowlands.

The air bath is a potent factor in light treatment. Halstead in 1905 said that most cases of surgical tuberculosis will recover without operation if they are given a fair opportunity in the open air. Leonard Hill believes that the "tonic effect of cold air is as important as light; so far as tuberculosis is concerned, more important. Good results cannot be achieved merely by using ultraviolet lamps indoors; this must be combined with exposure of the skin to the open air." The term heliotherapy presupposes a solar bath and a life out of doors; exposure to the sun under ultraviolet transmission glass is not heliotherapy.

The conditions under which solar baths are taken are never the same. Each day provides a different combination of light, temperature, humidity, and air currents. The constantly changing and out of door environment give the bath interest and make it pleasant and colorful to take. Sir Henry Gauvain attributes the better results achieved by heliotherapy over artificial light to be the stimuli which come from constantly changing conditions of the bath, the alteration of light and shade, heat and cold, and of humid and dry air. The conditions under which artificial light baths are taken indoors remain more or less monotonous. The light, ventilation, temperature, and humidity do not change and the bath becomes uninteresting and wearisome.

Gauvain says that with the prolonged intense stimulation the patient is unable to make a continuous response; in the effort he becomes exhausted, irritable, and nervous. Patients taking treatment in the desert find that constant sunlight causes the same train of symptoms and they frequently have to discontinue the baths for a few days.

Heliotherapy and artificial light therapy are not cures for any form of tuberculosis. They are merely adjuvants to other well known forms of treatment. Rest, good food, and fresh air are the essential elements of the treatment and have a universal application. They are suitable for all types of lesions, individuals, and climates. Light treatment is limited in its application and must be prescribed selectively for lesion, individual, and climate.

Ambulatory methods have no place in the treatment of active tuberculosis of any form.

Bed rest is needed until the lesion recedes or becomes quiescent. The rest prescribed must be both local and constitutional. For joint cases orthopedic appliances are selected which will immobilize the joint, maintain the desired position and yet not interfere with light treatment. When the disease is acute and a good position difficult to maintain with the open type of apparatus, it may be necessary to use plaster casts or shells until activity has subsided. It is better to sacrifice heliotherapy for a time than a good functional position.

Immobilization is maintained until activity has subsided and the danger of deformity passed. More freedom is then allowed, but recumbency is maintained for several months or until the disease becomes quiescent. When x-ray and physical examination indicate a healed condition and the physician and surgeon agree that it is safe to allow ambulatory treatment the patient is placed in suitable splints, braces or other apparatus and gradually allowed up.

Weight bearing is deferred until the patient has been ambulant for several months and the increased exercise indicates that it is advisable. With weight bearing joints the disease should be clinically healed and the joint stabilized when this point is reached.

When it is possible, an effort is made to correct contractures. They are reduced gradually; forcible correction is never attempted.

In acute processes with destructive disease of the joint, it may be advisable to allow the joint to assume its own posture and to correct the distorted posture surgically after the disease has become healed.

There is a considerable difference of opinion with regard to the effect of a faulty diet upon the development of tuberculosis. Experiments in which laboratory animals were fed deficiency diets and subsequently infected with tuberculosis gave conflicting evidence regarding their effect upon the development of tuberculosis. McCollum thinks that this might be accounted for by failure to control the experimental diet with sufficient care.

The effect of disturbed social conditions and the lack of food upon the tuberculosis death rate during the World War is well known. It is a repetition of previous experiences with wars, famine, and pestilence. The association of disease with the lack of food is evinced by the petition in the church's litany begging delivery from plague, pestilence, and famine. It is an accepted law with tuberculosis specialists that an adequate diet is essential for the proper treatment of pulmonary tuberculosis, and it has been proved to be necessary for the normal growth of the child.

Fully developed cases of rickets and scurvy are not often seen with tuberculosis, but children frequently are in what McCollum calls the "twilight zone" of nutritional instability. Most of the children show malnutrition when they enter the sanatorium, and undoubtedly, it has much to do with the development of the disease.

A large proportion of the patients are underweight; they have diseased tonsils, otitis media, sinus disease, and faulty food and health habits. In order to correct their habits and to get them to eat an adequate amount of suitable food, these physical defects have to be corrected. The chronic conditions of the ear, nose, and throat often are the cause of poor appetite and an aversion to food.

Children with faulty habits of eating have to be watched during their meals and encouraged to eat the balanced ration. Some of the children need individual attention and others may require special diets until their idiosyncrasies and habits have been corrected. When the food is properly prepared and attractively served, they soon adopt the habits of the group and eat the required diet.

Pulmonary Tuberculosis: Light treatment is contraindicated in acute exudative forms of the disease and in cases with recent or large hemorrhages. The mixed and productive types of the disease show little benefit from light therapy. If surgical measures are indicated they should be promptly instituted rather than to experiment with conservative

measures. Occasionally the nutrition of chronic productive types and subacute pleurisies with digestive disturbances are improved by giving heliotherapy.

The Complications of Pulmonary Tuberculosis: Fistula in ano, laryngitis, and intestinal tuberculosis are benefitted. The treatment of laryngitis must be combined with complete vocal rest and intestinal tuberculosis must be treated with a residue-free diet. Peritoneal and lymph node tuberculosis should not be operated upon. The majority of the cases respond rapidly to light therapy.

Phlyctenular keratitis treated with a high vitamin diet responds to light therapy.

Ocular and anal tuberculosis respond less favorably to light than most other forms. Oral tuberculosis is very resistant to treatment.

In tuberculosis of the skin, lupus vulgaris responds specifically to local applications given according to the Finsen method. Treatment should be combined with a high vitamin diet.

Scrofuloderma and erythema induratum react favorably at times to general and local exposures but not as constantly as lupus vulgaris. Lupus erythematosus is aggravated by light.

Genitourinary tuberculosis reacts favorably to light therapy when given as an adjunct to other types of treatment. The treatment of genitourinary tuberculosis should be guided by a specialist, however.

FOUNDERS' MONUMENT ADDRESS*

By T. M. HOOD, M. D.
Clarksburg, W. Va.

MR. President, members of our Association, ladies of the Auxiliary, citizens of Rivesville, and all relatives and friends of these worthy pioneer physicians, gathered here to do them honor.

As chairman of the Monument Committee and of the Joint Building Committee, I wish briefly to describe the nature of this monument and the steps taken in building it.

At the Clarksburg meeting of the West Virginia State Medical Association in 1931, it was suggested that our Association erect a marker or monument to its founders. The Association in its Council and House of Delegates favored the proposition and president C. H. Maxwell appointed the following committee to be known as the "Monument Committee", *viz.*, Drs. T. M. Hood, C. O. Henry, Robert J. Reed, Sr., T. M. Barber and Walter E. Vest.

The committee immediately had its first meeting and elected T. M. Hood as chairman and Walter E. Vest as secretary.

At the meeting in Parkersburg, in 1932, the committee reported an arrangement with the town of Rivesville to build the monument jointly.

Before the meeting in Charleston, in 1933, Tom Hood, II, a graduate of the National Arts School of Washington, D. C., was asked to design the monument, and George Ice, an expert stone mason of Fairmont was asked to figure the cost.

The committee at that time had in mind transporting 33 boulders, a boulder for each name on the monument from the Cheat River, to be piled up on this lot, cemented together and imbedded therein the bronze tablet containing the 33 names. The approximate cost of such a monument was figured at $2,000.00 on the part of the Association.

At the Charleston meeting in 1933, the committee asked for an appropriation of $2,000.00. The depression in business being

*Read at the dedication of the Founders' Monument at Rivesville on June 9, 1936.

somewhat alarming at that time, the society did not see fit to grant such a sum.

The committee, however, was not discouraged and before the next annual meeting in Huntington, the chairman had called the Monument Committee to meet with our newly elected state president, Dr. Roy Ben Miller, at Clarksburg. The site, style, plans and cost were viewed and discussed and the Association at its next Huntington meeting granted an appropriation of $500.00. President Miller appointed a building committee, consisting of Drs. T. M. Hood and C. O. Henry to proceed with the project in conjunction with the town of Rivesville.

During the summer of 1934 the Joint Building Committee, consisting of Mayor George Stone, the late Ernest Chrislip and Hood Straight, representing the town of Rivesville, with Drs. C. O. Henry and T. M. Hood representing the Association accompanied by George Ice, our stone mason, with past president Dr. C. H. Maxwell as pilot, went on a tour into Randolph and Tucker counties in search of a suitable stone. At Elkins we called on Mr. Claude Maxwell, who gave us valuable information as to where crystal sandstone could be found and also told us of the great merits of this material for building markers and monuments.

Near Blackwater Falls we selected a crystal sandstone—nine feet long, four feet wide and two feet thick, weighing about seven and one-half tons. By the kindness and coöperation of the State Road Commission it was brought to Rivesville at little cost to our society.

Here I wish to compliment two parties, Mr. Thomas Craig, assistant State road engineer and the county road engineer of Marion County, Mr. J. J. Ruddy, who gave such hearty coöperation that you might suspect they were sons of physicians.

At the Wheeling meeting, in 1935, under the administration of President R. H. Walker, the report of the committee was accepted and the Association's check for the balance due authorized, making the total cost of the monument to our Association $714.69.

Before closing this report I want to thank this Association for giving me a part in this pleasant duty which has been one of the greatest pleasures of my life.

For four years we have worked at this project to honor these men. A few of us here can remember most of these founders personally. They were our tutors and to us it is a personal matter. We can see their faces. We know what they did! We review their lives and cannot help but be impressed by the association, or union, as you may call it, of such men. Many of them were fresh from the Civil War, quite a number from the northern army and an equal number from the southern army. Perhaps there was no group of citizens which got together so soon after the war to make peace and build our new State as did this organization of doctors.

This group had much to do in advancing our free school system and in starting our university. They were led by that Christian physician and humanitarian, James E. Reeves, executive secretary of our Association for fifteen years who was induced to accept the presidency in 1882. The climax of this great physician's life I believe, was the formulation of the West Virginia health laws, empowering the State Board of Health to license physicians, putting them on a par with school teachers by requiring that physicians pass an examination to qualify them to treat the sick.

Before I turn this monument over I want to again thank the Association for this lovely duty they have put upon me.

Mr. President, Mrs. Prunty, Mayor of the Town of Rivesville, I turn this monument over to you, not only to be properly dedicated as I am sure it will be, but to be preserved and cared for as long as there is honor among men.

DOGS IN CITY HOMES

If one were to find everything in its proper place, one would find dogs only in the country, so it is affirmed in an article in the July *Hygeia*, written by "one who loves children as well as dogs." Asthma is often traced to pets living in homes of their owners.

THE STERILE COUPLE*

By A. P. HUDGINS, M. D.
Charleston, W. Va.

DEFINITIONS

Fertility: Absolute—Physiological perfection of mechanism of conception.

Infertility: All grades of fertility short of absolute. Conception occurs but does not go to full term.

Sterility: Inability to initiate reproductive process. Failure of conception.

Absolute—Initiation of reproductive process is impossible. *Temporary*—can be corrected; *Permanent*—cannot be corrected.

Relative Sterility (or fertility)—Stages between absolute sterility and fertility. Capacity to initiate actually present but depressed below level of physiological perfection.

Primary—Conception never occurred.

Secondary—One or more pregnancies but no further conception can be accomplished. "One child sterility" is a special form of this.

Congenital—Conditions present from birth.

Acquired—Condition which destroyed pre-existing fertility.

Voluntary--Contraceptive methods or continence.

Involuntary—Against will—(seeking help).

INCIDENCE

Difficult to Determine: 1. Birth rate statistics do not differentiate failure to conceive from accidents of early pregnancy. 2. Contraceptive methods used voluntarily.

Estimation: Ten to sixteen per cent of modern marriages are childless. Two million childless marriages.

CAUSES

I. Deficient production of germ cells. (Spermatozoa or ova.)

Definition: Aspermia—lack of semen. Azoospermia—absence of spermatozoa. Oligospermia—sperm reduced in number. Necrospermia—sperm dead. Anovula menstruation—menstruation without ovulation.

A. *Organic Causes:* a. Arrested development of gonads. (May result in or be associated with more extensive genital hypoplasia or gonads may be normal in gross appearance with normal endocrine function but no development of germ cell production element. May even have normal or hyperlibido.)

1. Depressing constitutional factors during adolescence:

(a) Endocrine failure—perhaps transitory. Pituitary (chiefly). Thyroid. Adrenal.

(b) Systemic diseases: (1) Syphilis; (2) Anemia; (3) Malaria; (4) Febrile diseases; (5) Tuberculosis; (6) Blood dyscrasia; (7) Diabetes; (8) Nephritis.

(c) Dietary faults: (1) General malnutrition. (2) Protein deficiency: Negative nitrogen balance with protein starvation means cellular malnutrition, draining vitality of gonads, thyroid, adrenals. (3) Vitamin deficiency: Chiefly vitamin E. Rickets. Scurvy. (4) Mineral deficiency.

(d) Faulty Hygiene: (1) Intense exhaustive living, (especially devastating during adolescence.) (2) Lack of fresh air, exercise, sunshine, rest, etc.

(e) Toxins: (1) Foci in body—(A) Teeth; (B) Tonsils; (C) Sinuses; (D) Intestinal toxemia; (E) Hepatic toxemia.

(2) External: (A) Morphine; (B) Alcohol—Orally. Inhalation. Fumes from methyl alcohol (industrial). This may apparently cause temporary sterility. Example: Chemists, automobile body painters. (C) Lead.

2. Undescended testicle.

b. Atrophy: 1. Mumps (with complication in gonads); 2. Neoplasm; 3. Trauma; 4. Roentgen ray exposure; 5. Senile. Menopause—The nearer menopause the less the chance for pregnancy. Premature menopause resulting from chronic pelvic inflammatory disease.

B. *Functional Causes:* a. Depressed constitutional factors (see above). b. Lactation—Lessens chance for conception. Suppression of milk in nursing

*Read before the Kanawha Medical Society, May 12, 1936.

NOTE—Mechanical difficulties prevent the usual outline form. The outline captions used are: I.; A.; a.; 1.; (a).; (1).; (A.; (1).

mothers suspicious of new pregnancy even though menstruation has not returned. c. Psychosexual—1. Prolonged engagements; 2. Masturbation (when excessive and persistent, results in (1) Impotence; (2) Frigidity; (3) Dyspareunia; (4) Menometrorrhagia, secondary to mycrocytic diseases of ovaries. (Rubin). 3. Frigidity; 4. Contraceptive methods when prolonged: "Perverted genital secretions brought about by passive hyperemia and active excerbations in one or both of these." (Rubin). (5) Sexual excess. (Spermatogenic exhaustion).

d. *Local factors:* 1. Passive congestion—(1) Varicocele; (2) Tumor.

II. Spermatozoa—ova pathway barriers.

A. *Male:* a. Genital passage obstructed or occluded.

1. *Epididymis:* (a) Gonorrhea—inflammation resulting in complete occlusion; (b) Tuberculosis—azoospermia is said to appear before other symptoms.

2. *Ejaculatory Ducts:* Stenosis by organic stricture, accompanying infections of prostate and posterior urethra.

3. *Urethra:* Stricture prevents normal ejaculation. Dribbling follows and sperm fail to reach the cervix.

b. Prostatovesicular secretions unfavorable. (Prostatovesicular secretions make up a large part of volume of semen.)

1. *Chemical:* Rarely, usually alkaline, and within favorable range.

2. *Bacterial:* (a) Affects chiefly by making secretions more viscid. (b) Toxins through blood stream affect testicles, directly lowering spermatozenesis.

3. *Mechanical:* Abnormally thick or tenacious. Infection or simple congestion. Spermatozoa entangled.

B. Male — Female. a. *Intercourse.*

1. Lacking or faulty (cervical insemenation not accomplished.) (a) Male. (1) Functional impotence. (More common and more serious a fault in sterility than frigidity.) (A) *Factors:* (1) Constitutional; (2) Endocrine; (3) Nervous and psychic; (4) Masturbation when excessive and persistent.

(2) *Organic:* (A) Malformations of penis. (1) Infantilism; (2) Epispadias; (3) Hypospadias; (4) Disproportion—short penis; (5) Urethral stricture; (6) Urethral fistula; (7) Deviation of axis of penis.

(b) Female. (1) Functional. (A) Dyspareunia. (I) External. aa. Painful local lesions. AA. Tender hymenal remnant. BB. Urethral caruncle. CC. Anal fistula. DD. Furuncle.

bb. Reflex spasm of levator ani—(Muscular spasm causes additional pain and obstruction)—Vaginismus psychic.

(II) Internal: aa. Intrapelvic conditions. AA.—Pelvic inflammation; BB.—Prolapsed ovaries; CC.—Retrodisplacement of uterus.

(B) Time of intercourse in menstrual cycle. (Fertile - sterile periods.)

Life of Ova:

Grosser and Sellheim	2 days
Schroeder	6 days
Fraenkel	10 days
Kurzrok	Short time comparatively few hours

Sperm: Takes two days to travel from seminal pool to ampullla. If it does not meet the ova there, it goes to peritoneal cavity and is destroyed by phagocytosis. Estimated to live 48 hours to eight days. (Kehrer).

Sellheimer presents the possibility of "provoked ovulation" by using an imaginary analogy. "Consider a fruit tree which periodically bears a crop providentially clinging to the branches until ripeness and gravity cause it to fall to the ground. It is no feat to imagine such fruit being prematurely separated by angry winds and every one has seen fruit linger beyond ripeness passing to rot and waste. Wise planters know when fruit attains ripeness and where nature fails to effect a separation of the ripe product such planters pass through their orchards and shake from the branches the tardy fruit. Perhaps the ripening ovum leaves the follicle prematurely or lingers past the time of ripening."

Ovulation Time:

Sellheim	8 days
Grosser	8 days
Meyer	17 days
Shroeder	15 days
Fraenkel	18 days
Postmenstrual (after first day of last period)	
Kraus	14 days
Ogino	14 days

(Before onset of next menses)

Rubin: "By clinical observation 10 to 14 days postmenstrual and may be ruptured in sex act."

(2) *Organic:* Malformations and structural deformities.

(A) Absence or underdevelopment of uterus or vagina; (B) Atresia of genital tract, partial or com-

plete due to: (1) Underdevelopment, (2) Scarring, (3) Atrophy. (C) Unruptured hymen; (D) Septate hymen; (E) Boat shaped perineum—(Allowing semen to flow out after intercourse); (F) Redundant vaginal wall; (G) Cervix: (1) Eccentric external os with deviated canal. (Birnberg). (2) Anterior position; (3) Elongation; (4) Polyp. (H) Uterine prolapse.

C. *Female:* a. Secretions hostile—1. Vaginal—normally acid. Acidity increased just before menses. (May be tested with litmus paper [cervix and vagina] before and after coitus. Spermatozoa require alkaline medium. Loses mobility in 15 minutes. (Five to 10 minutes if hyperacid)—(Wolbarst.)

2. Endocervical: (a) Chemical—Rarely if ever a factor. Reported always to be moderately alkaline.

(b) Bacterial: Alters viscosity. Alters solubility—(Kurzrok). Not important as bacteria or toxins per second ("Pus lethal to sperm"—Rubin).

(c) Serological: Theoretically immunity may be obtained when intercourse is frequent and large amount of semen present for "absorption."

(d) Mechanical: (1) Abnormal viscosity—(A) Chronic passive congestion: (I) Faulty sex hygiene; (II) Malpositions; (III) Pelvic tumors. (B) Infections. (C) Inadequate drainage: (I) Small external os; (II) Stenosis of cervical os. (2) Semen dissolves normal cervical mucus plug but not abnormal secretions (Kurzrok). Others factors, perhaps endocrine chiefly involved. (Moench).

b. Cervix (as above) (2) (G).

c. Uterine blockade: Only a passage way for sperm to ova until fertilization. 1. Pregnancy—Prevents superimposed pregnancies. 2. Absence of uterus—Congenital; surgical. 3. Obliteration of lumen—Atresia; extrinsic pressure (tumors).

Intrauterine tumors: FFbroma — May result from sterility rather than sterility resulting from fibroma.

4. Developmental: Infantile uterus—Often associated with generalized infantile genitalia.

5. Malposition: Retrodisplacements of fundus. Cervix placed anteriorly.

d. Tubular obstruction and occlusion (55 to 60 per cent—Rubin): Causes—Developmental; inflammatory; spasm.

1. Obstruction—(partial or temporary): (a) Mucus plug; (b) Cohesion of endosalpingeal surfaces—(see adhesive obstruction); (c) Pressure of extrinsic tumors—Fibroma uteri at cornu. Cystic ovary; (d) Spasm (4.7 per cent): Isthmic or interstiteal portions.

2. Occlusion: (a) Developmental defect—(May be more common than previously thought): (1) Occlusion; (2) Absence of tube. (b) Adhesive obstruction: (I) Inflammatory—(A) Gonorrheal: Isthmic—"One child sterility"; fimbriated end, salpingitis, gonorrheal. (B) Tuberculosis; (C) Puerperal; (D) Postabortal; (E) Non-pelvic peritonitis, appendicitis.

e. Impassability of ovariotubular hiatus: (No direct connection between ovary and fimbriated end of tubes.) Exaggerated by—Prolapse of ovary; adhesions; abnormal peritoneal folds.

f. Mechanical impediments to rupture of the graafian follicle: 1. Thickened tunica albuginea; 2. Adhesions; 3. Cysts; 4. Passive congestion.

III. Spermatozoa-ova incompatability: A. Intermarriage of widely different races. Octoroons—Three generations of mixing white and black. Lipplapps of Java-Dutch and Malays. B. Consanguinity: Marriage of blood relatives, 33 per cent sterile couples in contrast to 15 per cent of non-consanguinous marriages. C. Innate biological incompatability—(May remarry and bear offspring.)

IV. Endometrium unsuitable for implantation: A. Structural—1. Tumors; 2. Malformations. B. Endocrine—(Corpus luteum deficiency chiefly).

Diagnosis: Cooperation of internist, gynecologist, urologist, pathologist.

Importance of Complete Study: 1. Research contribution—Evaluates true importance of any single factor; 2. Eliminates much worthless, harmful treatment, especially operations on wife; 3. Reveals all factors enabling complete treatment of all factors and more satisfactory results.

History: (Husband and wife)—Full and complete, especially: 1. Age; 2. Occupation and possible exposure to toxic substances—lead, methyl alcohol, inhalation; 3. Past illnesses: (a) Focal infections, (b) Venereal diseases, (c) Prolonged or debilitating diseases, (d) X-ray or radium, (e) Genital. (1) Operations; (2) Disease and complications; (3) Injuries.

4. Previous marriages: (a) Children or pregnancies, (b) Contraceptives.

5. Previous investigations: (a) Methods used, (b) Results, (c) Treatments.

6. Digestive disturbances: (a) Appendicitis, (b) Hepatic toxemia, (c) Constipation.

7. Diet: (a) Quantity; (b) Character—(1) Protein; (2) Vitamin; (3) Minerals.

8. Sex Life: (From husband and wife separately) —(a) Libido, (b) Orgasm, (c) Potency and ejaculation, (d) Frequency, (e) Dyspareunia, (f) Contraceptives.

9. Genital: (a) Female—Menstruation; age at onset; behavior during adolescence; subsequent change; present type; cycle; regularity (by calendar record); duration; amount; dysmenorrhea; associated symptoms: nervousness, headaches. (b) Male: (1) Discharge; (2) Dysuria.

10. General (a) Use of alcohol, (b) Weight-change especially if rapid or recent, (c) Skin, (d) Hair—abnormal growth, (e) Headaches, (f) Vertigo, (g) Nervousness, (h) Fatigability, (k) Hygiene: (1) Daily routine; (2) Rest; (3) Work; (4) Exercise; (5) Sleep.

Examination: Husband and wife—General and complete. Especial significance: A. General appearance—Development, nutrition, emotional balance, tremor. B. Skeletal growth—Features, hands and feet, weight distribution and obesity. C. Skin—Texture, hair distribution, nails, vasomotor disturbances: Flushing and perspiration. D. Foci—Teeth, tonsils, sinuses. E. Thyroid. E. Physical measurements—Height, weight, sitting height index, temperature, pulse, respiration, blood pressure.

G. Genital: Male—a. Testicles—Abnormalities, failure to descend, hypoplasia, chronic passive congestion, atrophy. b. Epididymides: Thickened, suggesting chronic inflammation. c. Varicoceles: Causing passive congestion. d. Prostatovesicular infilammation and congestion: Rectal digital; vesicles distended suggests obstruction of ejaculatory ducts. e. Verumontanum: Endoscope. f. Urethra: Stricture, discharge. g. Malformations and deformities: Hypospadia, epispadia, urethral fistula.

Female: a. Malformations and deformities interfering with normal coitus; b. External vestgies of old gonorrhea: Skene's glands, Bartholin's glands, urethritis; c. Urethral, vulval, anal lesions productive of dyspareunia; d. Perineum: Relaxation; e. Vagina: Deformation, infection; f. Cervix: 1. Positions which would interfere with normal insemination; 2. Os - stenosis; 3. Inflammation and endocervicitis; 4. Hypoplasia—long and conical; 5. Secretions: (a) Viscosity—Tested by attempt to remove with applicator or manipulation on glass slide.

(b) Reaction: 1. Litmus paper; 2. Hydrogen ion value investigated by colorimetric comparison using suitable indicators and buffer solution found invariably alkaline ranging between pt. 8.0 to 9.0 (8.5 in 80 per cent). Nor is this modified by age, parity, menstrual cycle, viscosity, or infection. Apparently theoretical value only.

(c) Microscopic: Leucocytes; bacteria.

g. Uterus: 1. Position—Retrodisplacement; 2. Size: A. Large—(1) Subinvolution; (2) Tumor growth. B. Small—(1) Hypoplasia; (2) Infantile.

3. Measurement: Measure of uterine index. The uterine index is a quantitative expression of the degree of differential development which the womb has achieved. Infantile uterus-cervix two-thirds corpus, one-third. Normal adult—cervix one-third; corpus two-third. Ratio is a fair gauge of extent of development. This applies to conditions of development and not to hypertrophic changes.

Hysterometer: A modified uterine sound with a sliding marker. Two measurements are taken in centimeters. C—Length of cervix external os to internal os. U—Length of combined interocervical cavity; external os to endometrium of fundus. The index is then calculated.

$$\frac{1}{2}\ \frac{(U-C)}{(\ C\ )}$$

Normal: A reading of .75 or higher indicates normal adult uterus.

Hypoplasia: A reading below 0.60 signifies a clinically important degree of hypoplasia.

Infantile: 0.25. Size of uterus itself does not necessarily mean maturity in development. A large uterus may have infantile proportions.

h. Adenexa: (1) Inflammation—Masses; tenderness. (2) Tumor growths; (3) Tubular potency.

(A) Insufflation test (Rubin test): Introduction of gas (usually CO^2) into the uterus under manometric and volumetric controlled pressure. If at least one tube is opened the gas will escape into the peritoneal cavity.

Determined by: 1. Mercury column reading drops; 2. Passage of gas can be heard by placing stethoscope over location of tube—heard as blowing sound; 3. Subdiaphragmatic, pneumoperitoneum demonstrable by roentgen ray when patient is erect; 4. Shoulder pain when patient is in erect posture (subdiaphragmatic peritoneal irritation.)

H. ENDOCRINE STUDY: (Differential diagnosis of endocrine hypofunction associated with sterility.) (By Bland, First and Goldstein).

Symptoms and Laboratory Studies	I. Pituitary	II. Primary Ovarian	III. Thyroid
Menstrual disturbance	Amenorrhea or abnormal bleeding.	Amenorrhea	Menorrhagia
Dysmenorrhea	Absent	Common	Absent
Obesity	Common, mammary-mons "girdle type"	Underweight	Common, uniform
Nervous system	Stable	Emotional Excess	Stable
Hair distribution	Profuse; male type	Normal or scanty	Normal
Thyroid	Normal	Normal	Enlarged
Genital hypoplasia	Marked	Marked	Moderate
Kidney function	Albuminuria; increased uric acid of blood.	Normal	Normal
Condition of eyes	Contraction of visual field	Normal	Normal
Dextrose tolerance	Increased	Normal	Normal
Basal metabolism	Lowered	Normal	Very low
Blood cholesterol	Normal	Normal	High
Specific dynamic action of protein	5% rise	20% Rise	15% rise--normal
Sstrogenic hormone in blood and urine	Low	Low	Low
Anterior pituitary gonadotropic hormone in blood and urine	Not demonstrable	Demonstrable in 50%	Not demonstrable
Sperm	Absent (Non-obstructive type.)	(Primary testical, or) Normal in number, but little or no activity.	

Laboratory and special tests. (*Marks essential, routine tests.)

A. Urine* Routine: Nitrogenous output in urine showing inadequate protein intake. Complete nitrogen partition test on 24 hour specimen of urine.

B. *Blood: Hemoglobin, leucocyte, differential, erythrocytes, Wassermann, chemistry when indicated. Sugar tolerance.

C. *Basometabolic rate: Significant even if only slightly low. Subnormal may mean hypofunction of other than thyroid gland.

D. Liver function tests.

E. Spinal Wassermann.

F. Dynamic protein metabolism (Pituitary dysfunction): Total increase in heat production above normal after protein ingestion. Test—Whites of three eggs, slice of toast and cup of tea (no sugar) given after control B. M. R. Normal: Increase B. M. R. 16 per cent after two or three hours. Pituitary hypofunction: Increase 2.3 per cent. Hyperfunction: Tumor increase, 35 per cent; hypogonadism increase, 20 per cent.

G. Prostatic smears: Reaction (always alkaline), pus cells, bacteria, viscosity.

H. Semen: *Specimen—(Repeated examinations should be made.) Information required: Number of days continent; time of ejaculation; time of examination.

1. Obtained by: a. Condom—Powder being carefully washed out. Advantage: Simplicity, convenience. Disadvantages: Powder spermatocidal; rubber is detrimental to sperms?

b. Withdrawal and collecting in large mouth sterilized bottle.

c. Mechanical irritation: Collection in large mouth sterilized bottle. Less chance of technical error.

*d. Huhner test is most ideal. Shows how spermatozoa reacts to secretions. Physiological test.

Technique: Wife presents herself for examina-

tion as soon after intercourse as possible—about one to two hours. With small syringe sperm are sought in cervical and vaginal secretions. Should show activity at least two hours in cervical canal.

Caution: Straining to void or defecate may expel sperm. This should be avoided before examination. Repeat at seven day intervals if necessary.

Spermatozoa: Moderate number in vagina and none or few in cervix means—1. Hostile vaginal secretions or faulty deposition of semen; 2. Intromission incomplete; 3. Failure of semen to reach cervix due to malposition of cervix; 4. Cervical os small with mucus plug. Sperm may be found active in postcoital examination and dead or inactive in condom specimen due to favorable influence of cervical secretions. (Wolbarst.)

e. Aspiration of testicles: In case of complete azoospermia—Differential diagnosis between gametogenic failure and blockade in epididymides.

2. *Care:* To be brought in as soon as possible—within two hours. Prevent chilling. This point has been overemphasized. Location of testicles in scrotum, it has been found that normally and ideally the temperature is slightly lower than within body cavity. Sperm even live at refrigeration temperature. Over heating: Perhaps more destructive. In care and enthusiasm specimens have been kept over radiator and harmful action results.

3. Examination: a. Gross—(1) Amount—normal four or five cc.; (2) Turbidity; (3) Viscosity. Should drop from pipette at rate of 15 to 16 drops per minute. If too viscid decreases motility of spermatozoa. Usual cause: Prostatitis. Contains thick mucus when first ejaculated. Becomes smooth and uniform fluid within short time by its own mucolytic power.

b. *Microscopic: (1) Drop undiluted on slide with cover slip. (a) Motility: (I) Number of active spermatozoa are estimated—10 to 15 per cent nonmotile, normal limits, or 10 to 15 per cent sluggish, normal limits.

(II) Speed: Spermatozoa should normally cross the field in three to five seconds.

(III) Endurance of motility: For examination, drops must be prevented from drying. If less than eight hours—subnormal. Usually show activity in 12 to 24 hours. Unusual specimen—72 hours.

(b) Foreign elements: Leucocytes—signs of infection if numerous; bacteria—signs of infection; corpora amylacea.

(2) *Counting chamber: (Killed with formalin fumes.) Number 75 to 300,000,000 per cc. Under 75M significant in sterility.

(3) Smear: Staining—1. Fuschin; 2. Special technique used by Dr. J. P. Beck of the Charleston General Hospital. To be published later.

*Morphology: Immature or abnormal forms are over 20 per cent, signify some degree of sterility.

Classification of abnormal forms (per cent of each)—Aplastic head, arrested development (tail slightly coiled), arrested development of tail, phantom cell, reverse staining of head, body abnormalities, rounded head, altered staining, tapering cells, immature cells, puff-ball cells, double forms.

(4) Chemical: Hydrogen ion value—Ph. 7.6 to 9.2 (usually 8.0 to 8.4).

I. Hysterosalpingograph: X-ray visualization of the uterine and tubular cavities after the injection of an opaque medium (iodine and oil). Differentiates unilateral potency, also locates accurately the point of obstruction and gives surgical prognosis for relief. Uterine hypoplasia, malformation and pregnancy can also be demonstrated by this test.

J. *Premenstrual endometrium: Removal of endometrial specimen within 24 hours before menstruation is to start. Microscopic examination—If the endometrium does not show the normal premenstrual glandular hypertrophy anovular menstruation is assumed.

K. Hormone study: (Bland, First and Goldstein)—Blood; urine.

Treatment: Object—To remove sufficient part of depressing sum total so that fertile and sterile level of mating may rise above the threshold of conception. Treat all the factors involved.

I. Deficient germ cell production: A. Functional—a. Adolescent care: Anticipate subsequent trouble in light of modern knowledge and treat cases early. Systemic—see below. Special care: Hygiene—Avoiding extreme intense exhaustive living. Endocrine—Treat any early sign of lack of proper development. Example: Undescended testicle; delayed menses (after 15 years).

b. Systemic: 1. Endocrine (organotherapy)—(a) Glandular therapy: (Proper diagnosis)—Treat primary focus intensely, when one gland has been brought up to its proper physiological level the others will respond. Specific intense treatment of one or more glands is more effective than gunshot therapy. Adequate dosage and prolonged treatment is important.

(A.) Thyroid: If B. M. R. is normal or slightly low—gr. one and one-half to two grains daily. (Up

to nine grains daily. (Charny). May help functional bleeding also.

(B) Estrogenic substance (Theelin): Chiefly for amenorrhea. Fifty to 100 rat units of Theelin daily hypodermically.

(C) Progestin (Corpus luteum hormone): One-fifth rabbit unit hypodermically q. a. d., for 10 days. Premenstrual—For deficient premenstrual endometrium and frequent abortion. Best when used following administration of estrogenic substance.

(D) Anterior pituitary like gonadotropic hormone: Functional bleeding—Two hundred rat units daily until bleeding is controlled, then q. a. d. for two months. Amenorrhea: Anterior pituitary lobe extract—Three cc. Anterior pituitary like gonadotropic—Fifty to 100 units q. a. d. for two months. Oligospermia or aspermia—Two hundred rat units every three days. Retarded sex development—Two hundred rat units every three days.

(E) Insulin: Ten units half an hour before breakfast and dinner for primary ovarian failure. Weight increases and genital function improves.

(b) Irradiation: Fifty to 80 r. (7.5 to 12.5 per cent erythema weekly for six weeks. Best when sterility is associated with hypomenorrhea.

2. Hygenic: Rest, sleep, fresh air, exercise, less mental strain, vacation, avoid exhaustion, sex rest—continence two to four weeks, correct obesity, diet. Ample protein, minerals, vitamins: (Milk, red meats, butter, green vegetables, citrus fruits, tomatoes and onions.)

3. Toxins: Foci—Teeth, tonsils, sinuses, intestinal stasis, hepatic toxemia, syphilis, diabetes, malaria, blood dyscrasias, nephritis, tuberculosis, alcohol, morphine.

B. Atrophy: No treatment effective.

II. *Local Abnormalities:* Male—A. Varicocele: Suspensory; surgery.

B. Prostatovesicular secretion hostility: Treat inflammation by massage, irrigations, topical applications and diathermy.

C. Occlusion of genital tract: 1. Epididymal blockade—(a) Surgery; (b) Artificial insemination. Sperm obtained by puncture of testicle and aspiration.

2. Ejaculatory duct: Usually improves when causative posterior urethritis and prostatovesiculitis is corrected. Catheterization of ducts through endoscope. Vasatomy for irrigation.

3. Urethral stricture: Dilatation; urethrotomy.

D. Malformations: Surgery—(Artificial insemination. Insemination using condom with small perforation at tip (for hypo and epispadia). Artificial insemination repeated frequently.

Indications: 1. Faulty delivery and reception. Making normal insemination impossible; 2. Incorrigible hostility of endocervical secretions; 3. Normal sperm and supracervical genital tract.

Technique: Fresh semen obtained in sterilized condom or large mouth glass bottle (after cleansing penis well.) Obtained by intercourse. Mechanical irritation—Semen to be examined for pus, bacteria by special method first. (Schorohowa).

1. Cleanse cervix; inject one cc. into cervix or uterus. Clean away mucus plug. Inject gently (not forcefully). May go into peritoneal cavity and cause irritation and inflammation. Woman in recumbent position for 30 minutes after injection.

2. Semen in mensinger cup and place over cervix for 24 hours.

E. Impotence: Causative factors—Local; constitutional. Psychotherapy.

F. Premature ejaculation: As for impotence.

Female: G. Functional disorders—a. Dyspareunia. Causes: 1. Internal. Correct: Pelvic disorder, inflammation, malposition, and ovarian prolapse. Methods—Diathermy and surgery.

2. External: Correct—External lesion, urethral caruncle, sensitive hymenal tag, rectal fissure, and furuncle. Methods—Surgery. Instruction in technique of intercourse and sex hygiene.

b. Vaginismus and frigidity: 1. Psychiatry; 2. Organotherapy; 3. Sex hygiene and technique.

H. Organic disorders: a. External genitalia—Lesions hindering intercourse or obstructing genital canal. Method—Surgery.

b. Vagina: 1. Structural—Deformity of introitus or canal: Atresia or constriction. Relaxation: Failure to retain semen. Method—Surgery.

2. Secretions*: (a) Abnormal acidity. Method—(1) Correct infection—see below; (2) Douche before coitus. Alkaline—Soda bicarbonate, isotonic solutions, (Ringer's or Locke's helps overcome acidity and disolves mucus plug.) 3. Artificial insemination.

(b) Infection: Method — Applications varying with causative organism: (1) Trichomona; (2) Gonorrhea; (3) Fungus; (4) Non-specific; (5) Ionization; (6) Diathermy.

c. Cervix: 1. Structural deformities—(a) Anterior position: (Usually associated with uterine displacement, hypoplasia of genitalia, pelvic congestion.) Method—Surgery. Suspension of uterus; pessery; artificial insemination.

(b) Prolapse, or elongated: Method—Surgery. Pessary.

(c) Eccentric external os with deviated cervical canal: Method—Gradual weekly dilatations. (Hegar dilators), weekly for two months. (Bernberg.)

2. Abnormal endocervical secretions: (a) Causes —(1) Chronic congestion; (2) Infection; (3) Cervical stenosis.

(b) Method: (1) Douching; (2) Glycerine tampons; (3) Diathermy; (4) Surgery. (A) Correction of intra-abdominal disorder; (B) Dilatation; (C) Cauterization; (D) Conation. (5) Sex hygiene; (6) Artificial insemination.

d. Uterus: Malposition; Fibroma—(size and location a factor.) Method:—Surgery.

e. Tubular obstruction or occlusion: 1. Cause—(a) Inflammation and congestion. (1) Methods: (A) Palliation; (B) Diathermy; (C) Elliott.

(b) Constriction of lumen: (1) Insufflation—(Rubin Method.) Effective in 15 per cent of cases if tubes not absolutely blocked. May act by: Dilating cervix; expelling mucus plug; separating coherent surfaces; straightening kinks; breaking light adhesions; overcoming tubal spasm. Atropine administered three times a day before treatment may be helpful. Coitus often is effective immediately after treatment.

2. Surgery: Salpingotomy—Chiefly when closure is at fimbriated end. Should be followed by repeated insufflations, (Sovak Method.) Ovarian implantation into uterus—(Tuffier Method).

f. Impassability of ovarian—tubal hiatus: 1. Circumovarian and circumtubular adhesions. Method —Surgery.

2. Ovarian prolapse: Method—Surgery; suspension.

3. Mechanical impediment to rupture of graafian follicle:

Method—(Treatment not satisfactory).

Surgery—(Conservative): Partial resection; decortication; puncture of cyst; excision of persistent corpus luteum. Diathermy.

III. *Functional:* A. Sex hygiene. a. Proper technique.

1. Orgasm: Prolong intromission; female orgasm delayed.

2. Frequency: Viability of sperm may be decreased if too frequent. Continence of two to four weeks may be advisable. Regularly not over twice a week. (Checked by spermomorphology). Spermotoxic substances may develop in response to copious supply of sperm. Baskin claims to have immunized patients against impregnation by three properly spaced intramuscular injections of semen.

Prognosis: What hope can you give patient after 12 to 24 months of married life and no pregnancy?: Depends on pathology found. In large groups of cases the reports have been:

Harlem	25%	
Rubin	19%	
Anspach	32.2%	
Polak	31%	(1916)
Hunner and Cary	25%	(1927)
Macomber & Reynolds	29.4%	(1928)

Dickinson: One in three patent tubes, with complete study. One in seven closed tubes, with complete study.

EDUCATION OF LAITY

One of the chief problems of medicine today is to discover ways and means to lower the cancer death rate and to educate the layman on this subject. Dr. Ira I. Kaplan writes of the progress of knowledge in cancer symptomatology in the July issue of *Hygeia* under the title of "Cancer Education."

Observations and careful, scientific study have disclosed that at the outset, cancer is a local disease, confining itself for a long time to the vicinity first attacked, and that a cure depends on the stage at which the malady is noted and on early and proper treatment.

While the exact cause of cancer is not known and it is still not certain that all cancers are caused by one exclusive agent, observation and study have shown that certain factors, such as persistent irritation, may give rise to cancer.

However, it is neither infectious nor contagious, nor is it transmitted from one member of a family to the others.

One of the greatest single factors in its high death toll is that of the widespread lack of information regarding early symptoms and treatment. It is extremely disheartening to the physician to be confronted by a patient who has this disease in an advanced stage at which time little or nothing can be done to relieve him.

Often if the person suspects cancer he will refrain from seeking medical advice, dreading a confirmation of his suspicion. Then when it is discovered, he is often beyond cure; whereas, had he gone for early consultation with the doctor he could either have been cured completely or had his condition largely ameliorated.

THE DOCTOR AS A MUSICIAN

By EDWARD PODOLSKY, M. D.
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APOLLO was the god of both medicine and music. Both have been recognized as measures of healing for a great many years. The ancient Hebrews knew of the healing virtues of music and took advantage of it in several specific cases, perhaps the most famous being that of King Saul when his reason was tottering. The Greeks also knew of the curative value of musical sounds. Xenocrates, Sarpander and Arion used harp music to curb the maniacal outbursts of madmen.

Doctors have contributed much of value to music. Quite a few have attained great reputations as musicians. Among the earliest of noted English composers was George Ethridge who lived during the sixteenth century and was one of the most famous of vocal and instrumental musicians of his day. He was a graduate of Oxford and a physician of great ability. Towards the end of the sixteenth century Sir Thomas Gresham established a Professorship of Music at Oxford. The first five men to hold this chair were all physicians.

Among the earliest compositions extant by medical men are those by Thomas Campion who was born in London on February 12, 1567. His early interests lay in medicine and he took his M. D. at Cambridge. Following his graduation he took part in Lord Essex's expedition which landed at Dieppe in 1591 and laid seige to Rouen. As a physician he gained admission to the Tower of London to visit his friend Sir Thomas Manson who was accused of complicity in the murder of Sir Thomas Overbury.

After his military adventures Campion became very much interested in music. The first of his musical compositions was "A Book of Ayres, set Forth to be Sung to the Lute Orpherian, and Base Viol." This appeared in 1601. Three more books of arias followed within the next seventeen years.

Dr. Campion also wrote several masques, both words and music, for special occasions. Among these was one performed at Whitehall in Twelfth Night, 1607, in honor of Sir James Hay. Another was performed in 1613 at the Banqueting House in Whitehall at the marriage of Frederick the Elector Palatine with the Princess Elizabeth, for one song of which he wrote the music also. In the same year he wrote a masque for an entertainment in honor of Queen Anne, wife of James I, and another masque by him was performed at Whitehall on St. Stephens' Night on the occasion of the marriage of the Earl of Somerset and Lady Frances Howard.

Dr. Campion was also a musical theorist of note. His "New Way of Making Foure Parts in Counterpart, by a Most Familiar and Infallible Rule," published shortly before his death, went through many editions. He died on March 1, 1616, and was buried at St. Dunstan's.

Probably the most famous of early English doctor-musicians was Henry Harrington. His "Great is the Pleasure" is one of the most popular of musical compositions and it has been played and sung in all quarters of the globe. He was born at Kelston, Somerset, England, September 29, 1727. In 1745 he entered Queens College, Oxford, with the intention of taking holy orders. He used to pass his vacations with his uncle William, vicar of Kingston, Wilts, from whom he inherited a taste for music. In 1748 he took his A. B. degree and shortly thereafter gave up his intention of taking holy orders.

Harrington thought that medicine offered a more attractive career, and for this reason he remained at Oxford, taking first his M. A.

and later his M. D. degrees. But the love for music was already being manifested in several ways. While at Oxford he joined an amateur musical society established by Dr. W. Hayes to which only those were admitted who were able to play and sing at sight.

When he left Oxford, Harrington entered medical practice at Bath. All his leisure time was devoted to music and composition. He was, in time, appointed "composer and physician" to the Harmonic Society of Bath on its foundation by Sir John Davies in 1784.

Two books in folio of Dr. Harrington's glees were issued in 1785. Later other glees followed. In 1800 he published "Elio! Elio! or the Death of Christ," a sacred dirge for passion week.

Harrington was also much interested in civic affairs. He was first an alderman of Bath and later was mayor of that city. His compositions are distinguished for originality, correct harmony and tenderness.

William Kitchner was another famous doctor-composer of the eighteenth century. He was born in London in 1775, the son of a coal merchant from whom he inherited a comfortable fortune. He was educated at Eton and Glasgow where he received his M. D. degree. But his interests lay mainly in music. He composed an operetta "Love Among the Roses." He also was the author of a musical drama, "Ivanhoe."

Dr. Kitchner was also the author of "Observations on Vocal Music" and editor of "The Loyal and National Songs of England", "The Sea Songs of England", "The Sea Songs of Charles Dibdin", and a "Collection of Vocal Music in Shakespeare's Plays."

He was also the author of some rather unusual literary works among, them "The Cook's Oracle", "The Art of Invigorating and Prolonging Life", "The Housekeeper's Ledger", "The Economy of the Eyes", and "The Traveler's Oracle." His medical views were rather eccentric, but his music was wholesome and pleasing.

By no means were the doctor-musicians all English. Florient Corneille Kist was among the most famous of Dutch musicians. He was born at Arnheim, Holland, January 28, 1796. He took his M. D. degree from the Universitysity of Leyden and from 1818 to 1825 practiced medicine at the Hague. He was a flutist and hornist of great ability, and among the greatest compositions written for these two musical instruments are to be found many by Kist.

Dr. Kist was a founder of the Diligentia Society at the Hague and later of the Caecilia which is still the most important musical society in Holland. He also was the founder of the Choral Union and Collegium Musicum at Delft.

In 1814 he settled at Utrecht where he became editor of the Nederlansche Muzikaal Tydshrift which he edited for three years. Dr. Kist wrote many cantatas and vocal compositions. His influence on Dutch music was profound. He was one of the most important of all Dutch musicians.

Perhaps the greatest of all doctor-musicians was Alexander Porfyrievich Borodin. He was the natural son of a Russian prince and was born in St. Petersburg on November 12, 1834. He was educated in medicine and in 1862 was appointed assistant professor of chemistry at the St. Petersburg Academy of Medicine. He was the author of several works on chemistry which were popular.

Dr. Borodin was also very much interested in medical education and he took a leading part in advocating medical education of women. He helped to found the school of medicine for women and lectured there from 1872 until the time of his death.

But it is as a musician that Dr. Borodin is now known to fame. His interest in music was stimulated in 1862 by his friendship for the great Russian musician, Balakirev. His wife was also very much interested in music and she helped to keep this interest alive in her husband. Dr. Borodin owed very much to the influence of Liszt at Weimar.

His first symphony was written in 1862-1867 and won favorable notice at once. His

greatest musical composition was the opera, "Prince Igor", which he began in 1869 but was left unfinished at his death. It was completed by Rimsky-Korsakov and Glazounov in 1889. This attained great popularity in Russia while its brilliant Polovtsienne dances became famous throughout Europe as a consequence of the performance of the Diaghilev Ballet.

In the field of orchestral music Borodin's symphonic sketch "In the Steppes of Central Asia" is well known. His second symphony in B minor is of the finest rank. He also wrote part of a third symphony, a couple of quartets and many delightful songs.

Dr. Borodin's total musical output is not very large, but it ranks among the greatest musical work of all time. He is one of the most popular of Russian composers, heard as frequently as Rimsky-Korsakov and Tschaikowski.

Alexander Borodin died in 1887 at the early age of 53. Had he lived longer there is no doubt that he would have taken his place among the great composers of all time. He is the greatest doctor-composer, a credit to his two great professions.

The list of doctor-musicians is, unfortunately, a rather small one, but the individual contributions of each man are of the highest order and of the greatest importance. Doctors have always been great lovers of music. When they lacked musical talent they contributed in the way of monetary aid in helping to foster this greatest and most useful of the fine arts.

7119 Nineteenth Avenue

STREPTOCOCCI

In the entire kingdom of germs there is no gang so perfectly organized or so widespread as the members of the streptococcus family. No locality is known on earth where the presence of streptococci has not brought grief, declares Dr. Herbert L. Herschensohn in the second of the series on "The Germs We Live With" in the May *Hygeia.*

Some members of the family are harmless; others are dangerous. There is no way of knowing, merely by looking at them to which strain they belong.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The year Koch announced the discovery of the tubercle bacillus, 1882, Forlanini published his first paper on pneumothorax. Yet only during the last decade has collapse therapy become accepted practice in this country. What are the more important considerations that have contributed to this change in the treatment and management of pulmonary tuberculosis? J. W. Cutler, physician-in-charge of the pneumothorax clinic, Henry Phipps Institute, discusses this subject in a recent article in the *Journal of the American Medical Association.* Abstracts follow:

Importance of Pneumothorax Therapy: Fever, night sweats, loss of appetite, malaise and rapid pulse are manifestations of toxemia. Toxemia may be of low grade, allowing the patient to enjoy relatively good health, or it may be acute and apparently out of all proportion to the extent of the disease. Toxemia makes the patient feel ill and favors the spread of the tuberculosis in the lungs. This spread results in more toxemia. To effect a cure one must first of all break through the vicious cycle and reverse the trend. Check and eliminate the toxemia and the appetite improves, the fever disappears and there is gain in weight and strength. This gives an opportunity for the natural healing forces to come into play and resolution and scar of the pulmonary lesion usually follows.

There is no drug to control the toxemia; bed rest is not sufficient, in many cases at least, to rest a tuberculous lung. Pneumothorax collapses the diseased area of the lung and shuts off the source of the toxemia. For this reason the immediate results of pneumothorax are often dramatic. But the lung itself is still diseased. If re-expansion is permitted before healing has taken place all clinical symptoms of active tuberculosis return.

The Time Factor: The second consideration in the treatment of tuberculosis is the factor of time. Clinical well being is not synonymous with cure; anatomic improvement often lags far behind clinical improvement and many patients will not remain in the sanatorium or stay in bed for the time required to obtain a lasting cure, particularly if they begin to feel well. Collapse therapy attacks this evil at its source.

When therapeutic pneumothorax is instituted the lung is splinted and kept at rest for as long a period as the physician may desire, two years,

five years or for the rest of the patient's life if need be. With the toxemia controlled and the patient feeling well and able to work, all that is needed to keep him in good health is to maintain the pneumothorax sufficiently long to permit complete healing of the tuberculous lung. Serial x-ray studies are evidence of the remarkable healing power of nature; large cavities and massive infiltrations may in time disappear and leave little trace.

From three to five years or more is necessary to bring about a lasting cure. The length of time pneumothorax should be maintained depends upon the extent and severity of the disease at the time treatment was instituted. There is no fixed rule; if a general rule may be ventured it would be to continue pneumothorax for at least a year after x-ray evidence indicates complete healing.

Social and Economic Considerations: The third important consideration in the treatment of tuberculosis is the proper management of the underlying social and economic problems. The tuberculous person who must depend upon his daily earnings or who carries a heavy financial burden finds it difficult to solve his economic problems. Long sanatorium care is a luxury many cannot afford. Pneumothorax therapy in many instances eliminates the necessity for long continued sanatorium care for it can be safely instituted at home or in a local hospital. More and more specialists, particularly in the larger cities treat their patients at home with collapse therapy instead of sending them away. In favorable cases (which constitute about 50 per cent) the patient may return to work in from one to three months after pneumothorax has been instituted. The ambulatory pneumothorax clinic at the Henry Phipps Institute, organized in 1931 in the heart of the slum district of Philadelphia, where poverty and bad hygienic conditions are common, treats about fifty patients each morning with results that compare favorably with similar groups of patients treated in well regulated sanatoriums. The field pneumothorax clinic of the Chicago Municipal Tuberculosis Sanitarium and similar clinics in other metropolitan centers report similar results. The economic and health value of such a plan to the community is obvious.

Pneumothorax Prevents Spread: The public health aspects of tuberculosis, another consideration, must never be overlooked. In a sense the physician who undertakes the treatment of the tuberculosis patient becomes the public health officer responsible for the welfare of the entire family and indirectly of the community. He must be on the lookout for sputum containing tubercle bacilli. Education of the patient and his family is a help in preventing the transmission of tubercle bacilli, but more effective is it to render positive sputum negative. When the diseased lung is satisfactorily collapsed tubercle bacilli almost invariably disappear from the sputum. A relatively simple procedure, pneumothorax, is therefore one of the most powerful weapons in the control of tuberculosis.

Improved Technic: Better understanding of pneumothorax and improvement in technic have contributed to the popularity of pneumothorax. Complete collapse of the lung such as Forlanini envisioned is not necessary. All that is necessary is collapse of the diseased part which places little or no strain on the contralateral lung. Selective collapse also makes possible, bilateral collapse, which widens the indications for pneumothorax. There are many institutions today in which pneumothorax is applied to 75 per cent or more of the tuberculous patients in marked contrast to the usual five to 10 per cent a decade ago.

Contraindications: The author then discusses indications and contraindications for pneumothorax treatment followed by brief descriptions of complications, the disadvantages of which are balanced against complications of passive treatment, leading to the conclusion that:

"Pneumothorax therapy has its dangers and complications, but they can be overemphasized. By and large they are not more serious than the complications of passive treatment, and their frequency and severity can be materially reduced by proper technic and management."

The Increasing Importance of Pneumothorax Therapy in Pulmonary Tuberculosis, J. W. Cutler, M. D., Jour. of Am. Med. Assn., April 18, 1936.

CATARACT OCCURRENCE

Cataracts may and do occur at any age, the most frequently observed being the congenital in children and the senile in the middle aged and elderly people. Dr. Abram B. Bruner discusses this interesting subject in the July *Hygeia.* He avers that heredity does play a part in many cases of congenital cataract, and definitely in the senile type. Since there is a noticeable familial tendency toward longevity, or old age, cataracts affect a fair percentage of elderly people; the longer they live, the more apt they are to have cataracts.

PRESIDENT'S PAGE

West Virginia now has a Social Security Act. It will soon be in operation. The various features of the new law pertaining to the medical profession were outlined in the JOURNAL last month. Because the medical profession will play a prominent rôle in carrying out the social security program, Governor Kump wisely placed a doctor on the five-man State Public Assistance Council. His selection of Dr. W. S. Fulton of Wheeling, president-elect of the Association, for this important assignment has met with the hearty approval of the doctors throughout the State.

At this time I wish to urge every county medical society in the State to take an active interest in county social security administration. The co-operation of the organized medical profession in this regard is our best guarantee that the social security program will not be administered contrary to the ideals and ethics of medical practice. We can best maintain the traditional family relationship between doctor and patient by reasonable coöperation. We can, on the other hand, lose much by indifference and neglect.

There are two things which the medical profession might well fear under the new social security set-up. First is the importation into West Virginia of any considerable number of outside professional social workers with socialistic tendencies. The second, which would follow the first, is the prospective employment of salaried physicians to render free medical service promiscuously in each county. I feel that the medical profession of this State is sufficiently well organized and sufficiently interested to guard against both of these eventualities. As West Virginians, let us do our part in showing that we can successfully administer our own problems without outside help.

Charles G. Morgan
President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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UNETHICAL PRACTICES*

A public official, in conference upon a matter of medical economics recently, held that the plan of medical organization was weak in that the standards of ethics in county societies vary with the level required by the membership of each local unit. This, he added, cannot readily be corrected as long as the local members are indifferent to or approve of unethical practices. He suggested that if medical organization cannot or will not correct this defect and apply its efforts to the maintenance of desirable standards, it might better place itself under the supervision of The Better Business Bureau, Chamber of Commerce, or some similar group.

Excessive charges for medical services rendered to those of meager income is the most troublesome and inexcusable example of unfair economic practice. It is admitted that patients may be at fault in not making their financial conditions known, and the average fee may be obviously excessive for a patient of very limited finances. Some endeavor to justify excessive fees charged those of very low income on the basis of charity service rendered others. It is plain that this position is not tenable. Moreover, investigation generally reveals that charity does not flow in any greater proportion from the hands of those who most often use this excuse for unjustifiable overcharge. The use of unfair collection methods for the exaction of fees known to be excessive must be recognized as a "racket." Laymen have questioned the disproportionate number of surgical procedures and amount of service rendered by certain physicians to those on medical relief. Thoughtless physicians seem to assume that transactions between the physician and his patient are governed only by *'laissez faire'*. On the contrary the physician, in the system of graduated fees, accepts responsibility to the profession, to treat with fairness the individual who is admittedly unable to judge his needs for service or fix the compensation therefor.

That which makes the individual ethical and fair, without conscious deliberation, lives in the fibre of that individual and, viewed from a moral, intellectual, or spiritual approach, is to some degree an unteachable quality. The interests of the whole group, and of the public as well as those of the individual, make it necessary that certain ethical standards be set up, rules of behavior defined, and certain stringencies of group requirements imposed. These can be taught, and should assist the individual to that form of self-discovery by which he may see himself in his relation to fellow members of his profession and the public which he serves. The Principles of Medical Ethics contain definite economic implications, as pointed out by the Bureau of Medical Economics in "Economics and the Ethics of Medicine."

The conduct of the individual in the economics of medicine is rightfully of interest to fellow physicians. The attitude of county medical societies toward unethical conduct and unfair economic practice is a matter of interest to other component societies, to the State Association, and to the American Medical Association. The responsibility of each is clear. In the politico-social organization of government, the acts of individuals or small groups may unfavorably affect national attitudes.

The attention of the membership of component societies should be directed to the amendment to the By-Laws of the Association, which extends the power of the Judicial Council in matters of fellowship and medical

*Submitted by the Committee on Legislative Activities of the American Medical Association.

ethics so that it "shall have authority . . . to request the president to appoint investigating juries to which it may refer complaints or evidence of unethical conduct which in its judgment are of greater than local concern. Such investigating juries, if probable cause for action be shown, shall report with formal charges to the president who shall appoint a prosecutor who, in the name and on behalf of the American Medical Association, shall prosecute the charges against the accused before the Judicial Council. The Council shall have the power to acquit, admonish, suspend or expel the accused." The language and purpose of the action is clear. Organized medicine can fix ethical standards and insist upon their observance by all its members.

Most physicians are guided by high ethical principles. To one who is responsive to the best traditions of medicine and to the nobility of character and sincerity of purpose which have created its ideals, the reflection of unethical conduct upon the profession is humiliating and intolerably offensive.

OUR TUBERCULOSIS PROBLEM

In spite of the fact that West Virginia maintains three State tuberculosis sanitaria, the number of available beds is still vastly inadequate. There is a continuous and ever-growing waiting list at all three institutions. The people of the State are faced with a most perplexing problem. Shall additional sanitaria be erected or additions made to those already in existence? If so, where shall the revenue be raised for this purpose? If not, what shall become of our tuberculous patients?

The McDowell County Medical Society has what appears to be a solution to this problem. At its last regular monthly meeting a committee was appointed to urge the State Board of Control to set aside a number of beds and to appoint additional personnel at the Welch Emergency Hospital to care for tuberculous patients now on the waiting list of Pinecrest Sanitarium. This committee was authorized to work with similar committees from other county medical societies appointed for the same purpose.

There has been a growing feeling for a number of years that the three State emergency hospitals have long since outlived their usefulness. At Welch, for example, there are two splendidly equipped private hospitals to care for the needs of that community. Approximately the same condition prevails at Fairmont and, to a lesser extent, at McKendree. Probably all three of these hospitals could be closed, as hospitals, without even slightly affecting the status quo. There would still be more than enough hospital beds in those areas to meet the demand.

We are particularly impressed with the suggestion of the McDowell County Medical Society because it might eventually, if properly applied, solve two very perplexing problems. First, it might remove the Welch Emergency Hospital, as such, as a most unnecessary State expense. Second, it might convert the Welch Emergency Hospital into a much-needed tuberculosis sanitarium for which there is a crying need at the present time. The latter objective is, of course, much more important. The former is an interesting and attractive by-product.

"THE RABIES RACKET"

"The Rabies Racket" is the title of an article which appeared in "Popular Dogs", May 1, 1936, which was brought to our attention by the Kanawha Hunt and the West Virginia Amateur Field Trial Association.

Taken as a whole, the statements contained in the article, in our judgment, ring true to fact, and so timely are they that a discussion seems in order. The one position taken which may be challenged is the designation "racket", a term we believe to be entirely unjustified in relation to the subject. Probably more mistakes are made due to lack of information, or to forming judgments on insufficient scientific evidence or after too brief a period of observation, than to any pecuniary motive such as we ordinarily associate with the word "racket". Moreover, careful observers differ

as to the value of canine rabies vaccine. For instance, the *Journal of the American Medical Association* in "Queries and Minor Notes", July 18, 1936, advises annual antirabic inoculation of dogs.

Rabies is a many-sided problem, and the most important phases of its control, as we view the matter, will be considered briefly.

Quarantine and the Stray: After trying various methods, a rigid quarantine and the humane destruction of homeless dogs has been found to be the best method of stamping out the disease. The one-shot method of yearly vaccination has been tried and variously appraised in different places, but the concensus of opinion, both from the experimental and the practical side, is that it is utterly inadequate. If vaccination is to be at all relied upon, at least six injections must be given at yearly intervals. All the objections and sob stories raised by some sentimentalists on account of the destruction of some child's pet cannot compare with the loss of, or the paralysis of, some friend or relative on account of rabies or its prophylaxis.

Do Not Kill Suspected Dogs: A very frequent mistake is the destruction of a dog as soon as rabies is suspected. Do not do this unless absolutely necessary. Place the animal in a strong cage for a period of two weeks. If he survives, this is the best proof of the absence of rabies. If he dies, then examine the head for Negri bodies. If this be negative, a rabbit should be inoculated subdurally.

Mistaken Diagnoses: Many veterinarians are prone to attribute almost any unusual symptoms or signs to rabies. As a result, the disease is far too frequently diagnosed. Unfortunately also, a positive report from the laboratory does not necessarily mean that Negri bodies have been demonstrated. Some laboratory workers hold the opinion that the brain would not have been sent in unless there were suspicions of rabies; that it is possible to overlook the presence of Negri bodies, especially if the animal were killed early in the course of the disease: hence, to be on the "safe" side, all brains should be reported positive. Aside from this unscientific attitude, the error here is that this is NOT a safe side. Many paralyzing and fatal accidents have occurred due to inoculation with antirabic treatments, and these regardless of whether the biting animal was rabid or not. The harm seems to come from sensitization by the nerve tissue contained in the treatments rather than to any specific rabies virus. The "safe" side is to determine whether the biting animal is rabid or not. If rabid, then proceed immediately with prophylaxis, absolutely disregarding the small percentage of cases in which unfavorable reactions take place. The danger of the latter is almost as nothing compared to the danger of developing rabies without prophylaxis. However, the writer has seen considerably more morbidity and mortality from prophylactic injections than from actual rabies. This observation should not militate against proper injections, as the number of cases in which rabies has been prevented is probably very large but impossible to estimate accurately.

Responsibility: Dog ownership is and should be a responsibility, just as any potentially dangerous possession is a responsibility. This is not sufficiently recognized in our State. In case of a bite by a rabid dog whose owner is financially not responsible, who is to prepare and examine the dog? Who is to bear the cost of the prophylaxis?

To summarize:

1. The humane destruction of all strays.
2. A careful system of licensing.
3. A rigid quarantine, keeping the dog in the family circle is the best combination of methods so far devised for the eradication of rabies.

—F. C. H.

ANCIENT BELIEFS

For 2,000 years, scientists believed that the object of breathing was to cool the fiery heart. Dr. Alvan L. Barach describes the gradual evolution of thought on the content of air and its relation to life in "The Gases of the Air in Medicine" in the July *Hygeia*.

FOUNDER'S HISTORIES AVAILABLE

All members of the Association who attended the annual meeting in Fairmont will remember the very splendid "Founders' History", which was prepared by Mrs. A. H. Stevens and the Auxiliary. Copies of the History were given out by the Association at the registration desk to all members and visitors in attendance.

There are still approximately 100 copies of the Founders' History available at the Association headquarters in Charleston. Members who were not able to attend the Fairmont meeting, and who desire copies of the History, may have them upon request. The Histories will be distributed free as long as the supply lasts.

The Histories are bound in heavy paper and are made up of some 80 pages of historical material and photographs of the founders of the West Virginia State Medical Association.

DR. FULTON APPOINTED

Dr. W. S. Fulton of Wheeling, president-elect of the West Virginia State Medical Association, was appointed late in June by Governor H. G. Kump to serve as one of the five members of the new State Public Assistance Council. The fact that Dr. Fulton was appointed for the six-year term on the Council is evidence that the Governor recognized the importance of medical participation in the Social Security program.

The appointment of Dr. Fulton has met with popular approval throughout the State, both within and outside the medical profession. The doctors of West Virginia have just reason to feel that their interests will be protected and that those who receive medical service under the new social security act will not be denied the free choice of family doctor.

The state administration, as well as the medical profession, can also feel on safe ground with Dr. Fulton on the State Council. No one knows any better than Dr. Fulton that the Social Security Act was passed for the indigent poor of West Virginia, and not for the private practitioners of medicine. Yet Dr. Fulton is wonderfully qualified to see to it that the indigent poor, who receive medical service, will receive the best service that is possible to obtain without infringing upon the ideals and precepts of medical practice.

After all, the principles of our present system of practice are based upon the welfare of individual patients. The two go hand in hand.

THE 1937 STATE PROGRAM

Within the next month or six weeks the new Committee on Scientific Work elected at the Fairmont meeting will begin work on the scientific program for the 1937 session at Clarksburg. In view of this coming meeting, all members who desire to present papers at Clarksburg should get in touch with the committee at once.

Invariably during past years, many requests for program assignments have been received by the committee after the program was already made up. In some instances this has caused considerable disappointment to both the committee and the prospective essayists. In order to avoid this disappointment, members are urged to submit their requests within the next 30 days.

It should be pointed out that the committee is rarely in a position to place all requests that are received. Because of duplication of subject matter and other reasons, many requests for program assignments must necessarily be turned down each year. However, the committee gives first consideration to those who make advance suggestions or requests relative to the program.

Communications relating to the Clarksburg program may be sent to any member of the committee or to the executive secretary at Charleston. Members of the committee are: Dr. William R. Laird, Montgomery, chairman; Dr. J. P. McMullen, Wellsburg, and Dr. W. W. Point, Medical Arts Building, Charleston.

CASE OF UNUSUAL BIRTH

By W. P. BITTINGER, M. D.
Summerlee, W. Va.

I called to see a white woman, 21 years of age, with two children, about 10 p. m., July 21, 1936. Examination showed a nine months pregnant woman who was having cramp-like pains in the lower back. Vaginal examination revealed vertex position with cervix beginning to dilate and thin out. I gave her a hypodermic of morphine and told her I thought the baby would be born the next morning.

Received the second call about 3:30 a. m. the next morning. I reached the house in about twenty minutes and asked her how she was feeling and she said "all right" but that her "waters" had broken.

I made an abdominal examination and found that the abdomen was about flat. The fetus had disappeared. The uterus felt hard and was lying below the umbilicus. I asked her if the baby was here. She answered in the negative and the two women with her said the baby had not arrived. I then made a vaginal examination, trying to figure out the situation in the meantime. I found a slight bleeding, no signs of fetus or afterbirth.

Has the woman been pregnant? Was it some kind of malformation of fetus made up mainly of fluid that had disappeared when she said her "waters" had broken? Where was the baby?

"Where were you when your 'waters' came?" I asked.

"On the slop-jar, and my husband emptied it in the outdoor toilet," she replied.

I sent the husband immediately to examine the toilet. He came running back crying and, of course, very much excited saying there was a baby down in the toilet and it seemed to be moving. I rushed out with flashlight and saw this unusual sight.

How to get it out? It was one of those New Deal toilets with a ventilation system and vent stack. (This may have saved the baby's life). Finally we got enough boards off so that while I held the husband by his legs he could reach down and rescue the baby and placenta. The baby was very cold, still alive but not crying. We washed it and surrounded it with hot water bottles and in a few hours it seemed about normal. Weight—eight pounds, male.

The baby must have been in the jar ten minutes and in the toilet thirty minutes before it was rescued.

If this baby survives, it will have a fine history especially if it runs for President of the United States.

MODERN PLUMBING HAZARDS

A resolution calling attention to the possible health hazards of modern plumbing was adopted by the joint committee on Health Problems in Education of the National Education Association and the American Medical Association held in June, 1936. This resolution, presented by Dr. W. W. Bauer and Dr. R. G. Leland of the American Medical Association, is published herewith:

WHEREAS, At the annual meeting of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association held at St. Louis, Mo., February 25, 1936, a presentation was made by Major Joel I. Connolly, of the Chicago Board of Health, relating to possible health hazards in apparently modern plumbing installations in public buildings, and

WHEREAS, It was manifest in the said presentation that plumbing fixtures which have been generally regarded as safe and sanitary in design may in fact constitute a real and serious health hazard by reason of the danger of back siphonage and contamination of water supply mains, and

WHEREAS, The probability exists that such apparently modern, safe and sanitary plumbing installations may exist in numerous school building in the United States, and

WHEREAS, The existence of such apparently safe, modern and sanitary plumbing installations and reliance upon them brings about a sense of false security there, be it

Resolved, By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association that this Committee apprehends the possibility of danger to the health of school children from apparently safe, modern and sanitary plumbing installations in school buildings, and be it further

Resolved, That the said Joint Committee earnestly recommends to all school boards and school executives that surveys be instituted by competent engineers to ascertain whether or not the danger of back siphonage and consequent pollution of water supply mains exist in plumbing installations within their jurisdictions, and that such surveys be followed by prompt corrective measures.

COUNTY SOCIETY NEWS

TRI-COUNTY MEETING

A tri-county meeting of the medical societies of Monongalia, Marion and Harrison counties was held at Morgantown on the afternoon and evening of June 2 with a good attendance. During the afternoon Dr. Chester D. Christie and Dr. John W. Holloway of Cleveland presented clinical cases at the Monongalia County Hospital.

The evening session opened with a dinner at the Morgantown Country Club at six o'clock. Following this, Dr. Christie presented a paper on "Thyrotoxicosis in the Aged", and Dr. Holloway presented a paper on "Duodenal Ileus." Both papers were highly interesting and instructive and brought out considerable discussion.

BOONE COUNTY

The installation of the Boone County Medical Society as an official component society of the West Virginia State Medical Association was held in the courthouse at Madison on the evening of July 15 with a full attendance. Dr. W. V. Wilkerson of Highcoal, president, presided. The society charter was presented by Dr. G. G. Irwin of Charleston, Association councillor, who welcomed the new society into the Association.

The scientific paper of the evening was presented by Dr. A. A. Shawkey, Charleston, on "A Study of the Hypertonic Infant." There was considerable open discussion of this interesting subject.

R. L. HUNTER, *Secretary*.

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of July 9, 1936. The program consisted of a most interesting motion picture film entitled "Graphic Registration of the Heart Action," which was shown by Dr. Oscar B. Biern.

CHAUNCEY B. WRIGHT, *Secretary*.

CENTRAL WEST VIRGINIA

The regular meeting of the Central West Virginia Medical Society was held at Summersville on Thursday evening, May 28, at 6:30 o'clock with 35 members and guests present. Following a fine dinner the scientific program of the evening was very ably presented by Dr. Randolph Anderson and Dr. G. H. Barksdale, both of Charleston.

Dr. Anderson gave a paper with lantern slides on "Chronic Arthritis." Dr. Barksdale then read a paper on "Arterial Hypertension." These papers were very ably presented, highly practical and freely discussed by those present.

The next meeting of the society will be held at Webster Springs.

The regular quarterly meeting of the Central West Virginia Medical Society was held at the Oakland Hotel, Webster Springs, on the evening of July 25 with a fine attendance. Dinner was served to the doctors and their wives at six o'clock, following which the scientific program was presented.

Guest speakers of the evening were Dr. Andrew E. Amick and Dr. Russell Kessel, both of Charleston. Dr. Amick discussed, "Practical Factors in the Prevention and Treatment of Infant Diarrhea." Dr. Kessel spoke on "Conservative Management of Pelvic Inflammatory Diseases." Both talks were very instructive and brought out considerable discussion from the members in attendance.

EUGENE S. BROWN, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of June 23 with a fair attendance. The scientific paper of the evening was ably presented by Dr. William C. Stewart of Charleston on "Rheumatic Fever and Rheumatic Heart Disease in West Virginia."

Three-minute reports on the various sectional meetings of the State Association at Fairmont were made. Dr. G. H. Barksdale reported on the Heart Section, Dr. V. E. Holcombe on the Eye, Ear, Nose and Throat Section, Dr. W. L. Cooke on the Section on Internal Medicine, and Dr. John E. Cannaday on the Section on Surgery.

This meeting marked the close of the summer activities of the society and no further meetings will be held until fall.

PETER A. HALEY, *Secretary*.

LOGAN COUNTY

The Logan County Medical Society held its regular meeting at the Logan General Hospital on the evening of May 13 with 15 members and 10 visitors in attendance. The guest speaker of the evening was Dr. Charles G. Morgan of Moundsville, state

president, who talked on "Some Problems Confronting the Medical Profession of West Virginia."

Dr. Raymond Squier, New York City, executive secretary of the National Committee for Maternal Health, outlined a five-year program which the National Committee expects to use in Logan county. This is an attempt to take a cross section of the indigent class of people in the county and give instruction in the matter of birth control, with the purpose of determining by results in actual figures whether in this class the rate can be reduced.

The Logan County Medical Society held its regular meeting June 17 at the Mercy Hospital with 19 members and five visitors present. Dr. I. I. Hirschman of Huntington read a very interesting paper on "Peripheral Arterial Disease." This paper was discussed by Dr. H. D. Hatfield, who also read a case report of a case treated by himself and Dr. Hirschman.

DANA T. MOORE, *Secretary.*

McDOWELL COUNTY

A called meeting of the McDowell County Medical Society was held at Welch on June 17, 1936, with 19 members in attendance. The purpose of the meeting was to bring to the attention of the Society the present acute condition in caring for the tuberculous patients of the State and, further, to appoint a committee to act with such committees from other societies to appear before the State Medical Association to secure some revision of the Welch Emergency Hospital for this purpose.

The following motion was presented and passed: "That a committee be appointed to unite with like committees from Mercer, Mingo, Logan and Wyoming Medical Societies in urging the State Board of Control as to the feasibility of setting aside a certain number of beds in Welch Emergency Hospital, and to provide additional personnel on the staff of this institution to care for tuberculous patients now on the waiting list of Pinecrest Sanitarium, or to make immediate provisions for this class of patients elsewhere."

The president appointed on the committee Dr. R. V. Shanklin, Dr. R. H. Edwards, Dr. J. C. Killey and Dr. F. E. LaPrade.

The president then called on the delegates to the state meeting at Fairmont for their report. Reports were made by Dr. R. H. Edwards and Dr. J. H. Anderson.

R. H. EDWARDS, *Secretary.*

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held in the reception room of the Appalachian Electric Power Company on April 30, 1936. Dr. W. H. St. Clair, Jr., was elected to membership.

Following this a very fine and interesting paper was presented by Dr. W. H. St. Clair, the subject being "Abdominal Emergencies." Dr. J. Francke Fox led the discussion.

Following the meeting light refreshments were served.

The regular monthly meeting of the Mercer County Medical Society was held in the Municipal Building on May 28, at 8:15 p. m.

The following program was presented: "Recent Advances in the Treatment of Syphilis," by Dr. A. C. VanReenen, Bluefield; "Case Report", by Dr. T. E. Vass, Bluefield; and "Why Not All Doctors" by Dr. F. N. Andrews, Bluefield.

Following these papers they were discussed jointly.

CHAS. T. ST. CDAIR, JR., *Secretary.*

OHIO COUNTY

The second annual business meeting of the Ohio County Medical Society was held on the evening of May 22 and was called to order by the president, Dr. Russell C. Bond. Following reports of the various officers and a farewell address of appreciation by Dr. Bond, officers for the ensuing year were elected.

Dr. Robert Armbrecht was elected president, Dr. H. G. Little, vice-president; Dr. W. M. Sheppe, reelected secretary; Dr. J. K. Stewart, reelected treasurer, and Dr. J. W. Gilmore, Dr. D. A. MacGregor and Dr. Charles Clovis, board of censors.

The annual banquet and golf tournament of the society was held on June 4 at the Wheeling Country Club with 93 members and guests present. The golfers teed-off at 12:30 o'clock with 44 members and guests participating.

At 6:30 o'clock a reception was held on the porch of the Country Club, followed by a dinner. The guests of honor were Dr. Charles G. Morgan of Moundsville, state president; Admiral P. L. Rossiter, surgeon general of the United States Navy, and Captain G. E. Thomas, personnel officer of the Medical Corps, United States Navy. Interesting addresses were made by the guest speakers.

A number of prizes were awarded in the golf tournament with Dr. Ivan Fawcett and Dr. D. A.

MacGregor tied for the highest number of strokes. The prizes were presented by Dr. H. T. Phillips and Dr. H. G. Little.

W. M. SHEPPE, *Secretary.*

RALEIGH COUNTY

The regular monthly meeting of the Raleigh County Medical Society was held at Pinecrest Sanitarium, Beckley, on the evening of June 18, 1936. Dinner was served to the members and a large number of visiting doctors from neighboring societies.

The guest speakers of the evening were Dr. Everett Watson of Mount Regis Sanitarium, Salem, Virginia, and Dr. E. C. Drash of the University of Virginia. Dr. Watson presented a paper on "Collapse Therapy from the Angle of Phthisio-Therapist." Dr. Drash gave a paper on "Surgery of the Chest as Applied in the Management of Tuberculosis."

L. M. HALLORAN, *Secretary.*

OBITUARIES

DR. RICHARD H. EDMONDSON

Dr. Richard Henry Edmondson, one of Morgantown's oldest and most widely known physicians, died on the morning of June 20, 1936, at the County Hospital after a short illness. He was 69 years of age and was an honorary member of the Monongalia County Medical Society and the West Virginia State Medical Association.

Prominent in medical circles since coming to Morgantown from Texas in 1902, Dr. Edmondson served as city and county health officer for several terms and was active in his practice throughout his 34 years in Morgantown except for 27 months spent in the Army Medical Corps during the World War.

He was born in Richmond, Virginia, on May 22, 1867, but moved to Austin, Texas, with his parents at an early age. After graduating from the University of the South at Sewanee, Dr. Edmondson returned to Austin where he was employed in the state land office. Here he became a friend of William Sidney Porter, later the O. Henry of short story fame.

In 1890 Dr. Edmondson graduated from the Hannemann Medical College at Philadelphia and for the next 12 years practiced in Texas, Arizona and New Mexico. He then pursued a course of study at the Post Graduate Medical School in New York and located at Morgantown in June, 1902.

Dr. Edmondson is survived by his widow, three daughters, and one son, Richard Edmondson, a senior in Hannemann Medical College.

DR. RUSSELL F. HUFFORD

Dr. Russell F. Hufford, 29 years of age, died at his home in Welch on May 19, 1936, following a brief illness. Dr. Hufford was graduated from the Medical College of Virginia in 1932 and received his West Virginia license the following year. He was a member of the McDowell County Medical Society and the State Association. The following resolution relating to Dr. Hufford's death was adopted at the recent meeting of the McDowell society:

WHEREAS, It has seemed wise to the Great Physician and All Powerful Healer to remove from our midst our fellow physician and brother, Dr. Russell F. Hufford; therefore

Be it Resolved, That we, the members of the McDowell County Medical Society, voice our submission to the decrees of an All-Wise Providence, express our appreciation of the service rendered by Dr. Hufford to the sick and suffering of this community and to the upbuilding of the medical profession of our county.

We who knew him best are glad to pay tribute to our departed friend and associate who was taken away from us almost at the very beginning of a useful life, and wish to express our deep and sincere sympathy to the members of his family in their bereavement.

Be it Further Resolved, That a copy of these resolutions be furnished Dr. Hufford's family, that a copy be sent to the State Medical Society for publication, and that a copy be read before the county society and then put on file.

GENERAL NEWS

W. VA. MORTALITY RATE

Dr. John F. Cadden, director of the Division of Communicable Diseases for the State Health Department, recently announced that the incidence of and mortality from typhoid fever, diarrhea and enteritis were the lowest on record for the last year and the first part of this year. Only 76 cases of typhoid fever have been reported for the first six months of 1936, said Dr. Cadden, and this is 45 per cent lower than it was last year during the same period when there were 117 cases reported.

There were 97 deaths from typhoid fever in 1935, or a rate of 5.2 per 100,000 population, while the year before that the rate was 6.8. Five years ago is was 12.7 and ten years ago in 1926 it was 16.9. Diarrhea and enteritis, which claims the highest toll from children under two years old, has been steadily decreasing in the past three years. The death rate dropped from 32.2 in 1933 to 26.6 in 1934, while last year it was reduced to 19.8 per 100,000 population.

Typhoid fever, diarrhea and enteritis are known as filth-borne diseases because the infections originate from human excreta, being spread because of lack of proper sanitation, water, milk and other foods being contaminated. Dr. Cadden contributed the steady decrease of these diseases in the past few years to the far-reaching sanitation program which has been put on by the State Health Department for the past decade. He said the Community Sanitation Program, which is being carried on now by the Works Progress Administration under the supervision of the State Health Department, had done untold good in providing safe, sanitary methods of excreta disposal by the construction of over 115,000 sanitary pit privies in the rural sections of the State.

BIRTH CONTROL COUNCIL

The National Medical Council on Birth Control, organized in June of this year, has just announced the two chief purposes of the organization. First, to control and supervise all medical policies of the American Birth Control League. Second, to initiate, encourage, and execute appropriate scientific research in the medical aspects of birth control.

The executive committee of the Council is composed of Dr. Frederick C. Holden, New York, chairman; Dr. Eric M. Matsner, secretary, and the following members: Dr. Eliot Bishop, Brooklyn; Dr. A. N. Creadick, New Haven; Dr. Foster Kennedy, New York; Dr. Edgar Mayer, New York; Dr. Richard N. Pierson, New York; Dr. Owen Toland, Philadelphia; Dr. Wilbur Ward, New York, and Dr. Prentiss Wilson, Washington.

STATEMENTS ON TUBERCULOSIS

The following abstract of important papers and statements presented by physicians at the annual meeting of the National Tuberculosis Association at New Orleans last April has been submitted by the West Virginia Tuberculosis and Health Association:

In his presidential address, Dr. J. J. Waring of

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Denver, made an earnest plea for physicians to continue the careful use of the stethoscope in the confirmation or correction of x-ray diagnosis. He also urged cost reduction so that the benefits of x-ray diagnosis of the chest can be made available to a larger number of people.

According to Dr. D. G. Alarson, Mexico is several jumps ahead of the United States in its organized anti-tuberculosis campaign. Advanced cases are sent to special wards of general hospitals. Only fifteen per cent of the beds for tuberculosis in the United States are in general hospitals.

Data analysed by Dr. E. R. Long and Dr. Florence B. Seibert indicate that P.P.D. Tuberculin properly used in the doses recommended will detect practically all clinical tuberculosis and with few exceptions all healed or latent tuberculosis of childhood and adult types.

A report of home management of 1156 contact cases over a period of eighteen years, presented by Dr. L. J. Moorman, stated that only one of the cases developed active pulmonary tuberculosis while under observation. The average duration of observation and management was approximately two years, many from four to six years and some longer. The results were obtained by considering the family as the unit for organization, care and education, breaking the contact by removal of the patient rather than the exposed children from the home.

A study of the distribution of tuberculosis in the southeastern states by Dr. C. C. Daver and Dr. L. L. Lumsden resulted in the conclusion that the wide differences in mortality figures by counties are not explainable on the basis of social and economic conditions; and that there is considerably more tuberculosis in this area in the older age periods. Tuberculosis mortality in the colored population of the south is considerably lower than in the northern states.

Another study by Dr. Thurman B. Rice of tuberculosis in Indiana points out that there is much less tuberculosis in the northern one-third of that state than in the southern portion. Differences in economic conditions, physical and racial types, education and sanatorium facilities in the two sections are noted as important factors.

In a paper on "Tuberculosis in Adolescence," Dr. Marion F. Loew, stated that improvement in early diagnosis now depends upon the recognition of the disease in selected groups before tuberculosis

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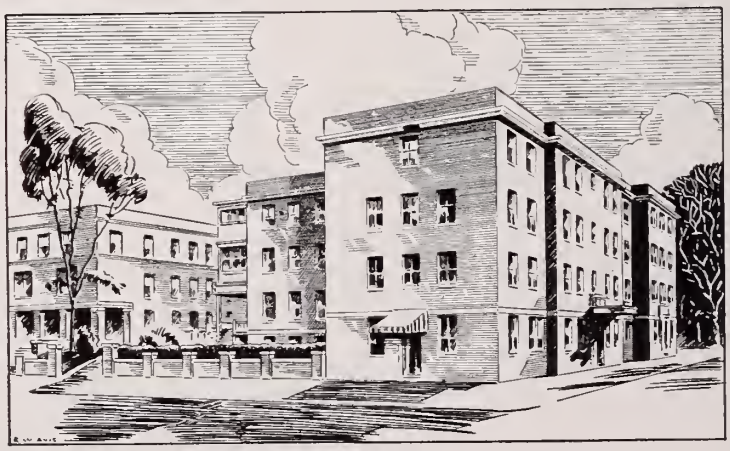

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• The sanatorium is a private institution with 150 beds, located in the Ginter Park Suburb on the Richmond-Washington National automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

• The plant consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.

• The large number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

• The buildings are lighted by electricity, heated by hot water, and are well equipped with baths.

• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

• Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

The Sanatorium maintains its own truck farm, dairy, and poultry yards.

Illustrated Booklet On Request

infection has produced symptoms and impaired health.

An outline for a control program of tuberculosis among college students by Dr. H. S. Diehl and Dr. J. A. Myers includes: tuberculin tests of entering students; periodic tests of negative reactors and x-ray and physical examination of all positive reactors; maintenance of health; examination of faculty members and employees, and easy availability of adequate medical service.

The family doctor was urged to become trained in the latest and best methods of diagnosis of tuberculosis by Dr. Elva A. Wright of Texas, because he is the one to whom the family turns for advice and comfort. She said that many doctors have not yet learned that the childhood type of tuberculosis shows few, if any, physical signs and the children referred to them by clinics are often dismissed, without suitable advice, to go on to an active tuberculosis of the adult type that might have been prevented.

"In planning our program," said Dr. Kendall Emerson, "reliance has always been placed on health education." In putting our knowledge of tuberculosis to work, he reminded us that no single organization can prosecute a health program with success, unless it is coordinated with a community health plan.

Discussing racial differences of tuberculosis among whites, negroes and Indians, Dr. E. R. Long stated that the average death rate for whites is about 57 per 100,000 population, for negroes the average is three or four times that for whites and the average for Indians, while not known, must be three or four times higher than for negroes.

The decrease of tuberculosis in Mexico is attributed by Dr. D. G. Alarcon to the following: 1. relative progress in hygiene; 2. improvements in housing; 3. raising of laborer's living standards. The still high mortality as compared with the U. S. is assigned to greater poverty and lower living standards, lack of hygienic education among the lower classes, bad working conditions, unbalanced diet, bad housing, high birth rate and exhausting climate conditions in some districts.

Since less than ten per cent of negro victims of tuberculosis are being discovered in the early stage, improved diagnostic facilities are essential for better control, is the opinion expressed by Dr. P. P. Mc-

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Medical Illustrator:
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WOMAN'S AUXILIARY

LOGAN COUNTY

The Auxiliary to the Logan County Medical Society met on June 24, at Mrs. V. A. Deason's home. Mrs. J. L. Patterson was the presiding officer. Mrs. E. H. Starcher together with Mrs. Patterson presented a report of the state meeting. The Auxiliary expressed its gratification for the honor bestowed upon them by the election of Mrs. E. H. Starcher to the office of president-elect.

Plans and projects for the fall and winter program of the Auxiliary were discussed and then adjournment was called until September when the society will resume its work.

MRS. WALTER E. BREWER, *Secretary.*

WITH OUR ADVERTISERS

THIRTY-FOUR YEAR RECORD

The Physicians Casualty Association of Omaha has recently published its report for "34 years of uninterrupted usefulness" in which they show payments to physicians for sick and accident claims of $535,052.98—over a half million dollars. The report further shows they have a surplus fund of $1,350,000 as evidence of their financial ability to pay what they promise to sick or disabled members.

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ERRATUM

In the page advertisement in the July issue of The National Drug Company, of Philadelphia, which appeared on page xi, the word 'grand' appeared instead of the word 'giant'. The paragraph should have read: "We offer a special Rag Weed Antigen Outfit complete for diagnosis and treatment of Fall Hay Fever for $10. Contains two diagnostic tests for mixed grasses and giant and dwarf rag weeds; 1 ampul-vial each Series 'AA', 'A' and 'B' Rag Weed Antigen; 25 cc. ampul-vial Sterile Salt Solution for dilution of antigen if needed; 25 cc. ampul-vial Epinephrin 1-1000 to control local or systemic reactions."

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII SEPTEMBER, 1936 No. 9

ORATION ON MEDICINE*

The Diagnostic Value of Intradermal Injections

By F. C. Hodges, M. D.
Huntington, W. Va.

The annual occasion of the meeting of this Association has seemed to me to have done at least two impressive things since my first attendance seventeen years ago—they appear to come at shorter and shorter intervals, and they have become of greater and greater importance both from the standpoint of scientific medicine and as a common meeting ground of our fellow practitioners, many of whom we are privileged to see only at this time.

It is noticeable that even during this brief span, a marked change in the personnel of those attending has taken place; many of our older friends and their familiar faces are no longer with us; but as compensation for their loss, we have larger and larger numbers of recent graduates whose training and equipment is ever greater, leading, we may feel sure, to better medicine throughout our State.

It has been truly said that the skin often mirrors the condition of the organs and tissues beneath; that many deep seated ailments are reflected by some pathognomonic skin manifestation. All too frequently, however, such lesions, if present, are with difficulty or not at all properly interpreted; on the other hand many constitutional ailments and conditions are reflected by no skin lesion whatever. It is this latter group to which we shall now give consideration, and discuss methods by which we may provoke a skin lesion by intradermal injections to help us evaluate the underlying processes.

The procedures will fall into three groups:

a. Those which are time-tested and in general use, such as the tuberculin, the Dick, and the Schick tests.

b. Those which are time-tested, but which are not in general use.

c. Those which promise to be of great value, but which require further experiment and trial, so that their proper place can be evaluated only at some future time.

*The Oration on Medicine presented before the W. Va. State Medical Association at Fairmont on June 9, 1936.

Lilliputian operations require Lilliputian instruments, so here we should employ a very small sharp hypodermic needle, and an all-glass tuberculin type syringe, both of which should be chemically as well as bacteriologically clean. It is important that the injection be intradermal, so that the wheal produced shall be round and white, with small depressions like an orange peel, due to the hair follicles. The amount should be small, on an average of 0.02 to 0.1 ml. Non-specific reactions are sometimes due to the injection of too large amounts.

A control injection should always be made, using either isotonic saline solution or normal homologous serum as the case requires. A positive test is determined by the size of the wheal, the presence or absence of pseudopods and redness surrounding the site of injection.

Causes of Specific Reactions: These vary a great deal according to the type of test.

1. The injection of a specific toxin causing local erythema or vesication in a sensitized person, as seen in the Schick and the Dick tests.

A positive Mantoux test has in the past been generally assumed to signify immunity, as well as allergy to the tubercle bacillus, and contrawise, that a negative test meant lack of infection, lack of allergy, and absence of immunity. Experimentally it has been shown that this reaction is not a necessary concomitant of immunity and that the latter can function fully and effectively in the complete absence of evidence of this hypersensitivity. Furthermore, it has been shown that this allergic necrotizing-inflammatory response may be injurious rather than helpful. A negative response in the presence of highly active or overwhelming infection has long been known. It has been shown that a negative tuberculin test does not mean absence of immunity. Probably an early infection even without subclinical reinfection may leave an immunity lasting long after the positive skin test has disappeared.

The finding of a negative response to tuberculin will rule out tuberculosis as the basis of certain clinical disorders, whereas a positive test means only that the hypersensitivity is present. In each instance the possible relationship of this hypersensitivity to the disease under observation still remains to be proved. No test or method yet devised will supersede the careful study of the individual patient.[1]

2. The injection of materials which to some persons are harmless, but which to others are toxic, causing a local reaction. In this category belong the extracts of pollens, foods, and animal emanations, which reactions we refer to as allergic. Just where this type overlaps the ones to follow is not known, but because this subject is too large and controversial it will here be excluded.

3. The intradermal injection of 0.2 ml. of isotonic saline solution into the flexor surface of the forearm of patients with edema, albumin, casts and red blood cells in the urine, unassociated with nitrogen retention or evidence of cardiovascular disease, is a valuable method of determining the immediate prognosis. The extreme whiteness disappears in a few minutes but the elevation, which is best determined by palpation, persists for fifty minutes in a normal person. In edema and pre-edematous states the disappearance time is greatly shortened, and in proportion to the gravity of the case. It shows changes earlier than other methods, and is an aid in directing therapy.[2]

4. The reaction to an intradermal injection of an homologous protein not normally present.

In the diagnosis of pregnancy an extract of placenta is employed.[3] In the diagnosis of malignancy, two antigens are employed; for the carcinomata, an extract of purely embryonic tissue obtained from pancreas and submaxillary glands of embryonic calves; for sarcomata, an extract of Wharton's jelly and red bone marrow.[4]

The theory is advanced that the characteristic embryonic protein is carried not only in the blood stream, but also finds response in the fixed cells, as expressed by the allergic reaction.

The correct results obtained in a great number of positive and negative cases have been demonstrated by some observers.

5. In essential thrombopenic purpura, the reaction to an intradermal injection of 0.1 ml. of a 1:3,000 standardized moccasin snake venom has been used as a prognostic measure, and to determine the indication for, and the prognosis of splenectomy.[5]

Such venom, in a positive case, causes the development of an ecchymotic area from 0.5 cm. to many cm. diameter, without close relationship to the platelet count. A reversal of a positive to a negative foretells recovery or improvement.

6. The introduction of a specific antigen which, if its specific antibody be present, is split into histamine and closely related toxic substances to produce a local irritation. To obtain such a response, at least several days must elapse after the onset of the illness, to allow time for the formation of antibodies.

Such reactions are of distinct value in the diagnosis of tularemia, in which a dilute suspension of B. tularense is employed; and of undulent fever, or brucellosis, in which either a killed suspension of Br. abortus and melitensis or of Brucin is employed. This has been found highly specific for detecting the state of Brucella allergy, but shows little difference between the character of the skin reaction elicited in immunes (recovered cases) and those actually infected. Even the ingestion of pasteurized milk containing killed Brucella is sufficient to sensitize one to the organism.

The reactions should be observed in 24 and 48 hours.[6]

The injection of sterilized pus from a chancroidal bubo produces a specific response which is valuable in the diagnosis of Ducrey infections. The interval from the presence of the ulceration to the production of a positive test is on the average five weeks. These allergic properties persist for years.[7]

Lymphopathia venereum is a specific venereal disease caused by a filterable virus, characterized by a primary lesion frequently of short duration, and often overlooked. The symptoms are very variable, and because of the sad consequences in late and neglected cases, an early diagnosis is important.

The intradermal inoculation of the brain of a mouse which has been inoculated with the virus is specific for this infection, (Frei test), and remains positive for years. Diseases with which lymphopathia venereum may be confused are thus more or less easily ruled out.

7. The introduction of a specific antibody, the action being the same as the preceding one, but in reverse, which, if antigen be present in the circulating blood, is split into toxic products which cause a local reaction. The advantage of such a test is evident, in that a positive response may be elicited very early in the disease, days before the production of antibodies. Such tests are capable of producing two distinctly different types of reaction. One, the classical serum sensitization response, is widely recognized and generally appreciated in its significance. The other, an erythematous-edematous reaction, characterized by simple erythema with central edema and complete absence of urticaria, is a bacterial specific response wholly unrelated to serum sensitization. These two reactions are often confused, but should not be. This is a useful diagnostic aid and may become more so in a number of infectious diseases. So far, its reliability has been reported in cases of tularemia, but a great deal of promising results in typhoid, streptococcic infections, meningococcic meningitis, chancroid, and pneumococcic pneumonia are being obtained.

An understanding of the nature and significance of this reaction will prevent its misinterpretation as an indication of serum protein sensitization and the consequent withholding of safe, useful antiserums from patients who may need them.

The ophthalmic test is less sensitive but of more value as a clinical index of susceptibility to serum reactions than the intradermal method. It is performed by instilling one drop of a 1-10 dilution of serum into the conjunctival sac of one eye, and read after 15

minutes. A positive reaction varies from slight injection to marked redness, with burning and itching, which subside in one-half to two hours.[9]

Attempted desensitization does not appreciably alter the percentage of serum reactions. This procedure is more likely to give the physician a feeling of accomplishment than to afford real aid to the patient. It should be remembered that such small quantities of horse serum as are present in the Schick test are sufficient to change the organism so that a later skin test with horse serum will give a positive result in 28 per cent of the cases.[10]

8. The discovery and the isolation of specific carbohydrates from many pathogenic bacteria has somewhat changed our views regarding the composition of antigens. The fact that the constituent which determines type specificty is a carbohydrate is striking, since immunity reactions have hitherto been considered exclusively the function of proteins. Of great interest is the fact that pneumococci of various types have been split into two portions—an R form which is common to all types, and a specific carbohydrate which differs in each type. Furthermore, R forms derived from one specific type may be caused to acquire the characteristics of another specific type by combining them with different carbohydrates.

The injection of 0.01 mgm. of specific polysaccharide into the skin of patients recovering from pneumococcus pneumonia may evoke an immediate local reaction in the form of a wheal surrounded by a zone of erythema. Such reactions are elicited only by the specific polysaccharide derived from the same type of pneumococcus as that causing the infection in the patient.[11]

Agglutination reactions are sometimes not sufficient to differentiate strains of bacteria isolated from different sources. In the case of staphylococci two type distinct carbohydrates have been found—the one is always and only associated with strains isolated from pathologic conditions; the other always and only in saprophytic strains, regardless of source. Patients convalescent from staphylococcic infections have exhibited marked skin reactivity to 0.1 ml. of a 1:5,000 dilution of the carbohydrate isolated from the pathogenic type, but not to that from the saprophytic type.[12]

Specific polysaccharides have also been isolated from the meningococcus, gonococcus,[13] m. catarrhalis, v. choleræ, B. typhosus,[14] hemophilus influenzæ, and the Brucella group.[15]

From these investigations it seems probable that a specific carbohydrate will be found in all types of pathogenic microörganisms.

Some of the newer procedures here discussed will probably prove to be as chaff which the wind driveth away, but others will prove to be wheat, for the nourishment and strengthening of the diagnostic measures at our disposal.

BIBLIOGRAPHY

1. Editorial, J. A. M. A., Vol. 106, No. 7, Feb. 15, 1936, p. 540.
2. *The Intradermal Salt Sol. Test*, Aldrich and McClure, J. A. M. A., 82:1425, May 3, 1924.
3. *An Intradermal Test for Pregnancy*, B. Gruskin, Am. Jour. Surgery, Vol. XXXI, No. 1, Jan. 1936, p. 59-61.
4. *Intradermal Test for the Determination of Malignancy*, B. Gruskin, M. D., Jour. Lab. and Clin. Med., Vol XVII, No. 12, Sept. 1932, p. 1237.
5. *The Value of Prognostic Venom Reaction in Thrombocytopenic Purpura*, S. M. Peck, M. D., N. Rosenthal, M. D., L. A. Erf, M. D., J. A. M. A., Vol. 106, No. 21, May 23, 1936, p. 1783.
6. *Brucella Infections in Animals and Man; Methods of Lab. Diagnosis*, I. Forest Huddleston, The Commonwealth Fund, 1934.
7. *The Intradermal Reaction for Chancroids with Chancroidal Bubo Pus*, H. N. Cole, M. D., E. A. Levin, M. D., J. A. M. A., Vol. 105, No. 25, December 21, 1935, p. 2040.
8. *Intradermal Antiserum Tests: A Bacterial-Specific Response Not Dependent Upon Serum Sensitization But Often Confused With It*, Lee Foshay, M. D., Jour. Allergy, Vol. 6, No. 4, May, 1936, p. 360.
9. *The Ophthalmic Test for Sensitivity to Horse Serum*, L. N. Clarborn, M. D., J. A. M. A., Vol. 98, May 14, 1932, pp. 1718-1720.
10. *The Development of Hypersensitiveness in Man*, F. A. Simon and F. M. Rockemann, M. D., Jour. Allergy, Vol. 5, No. 5, July, 1934.
11. *The Role of Specific Carbohydrates in Pneumococcus Infection and Immunity*, O. T. Avery, Ann. Int. Med., Vol. VI, No. 1, July, 1932, p. 1.
12. Proc. Soc. for Exp. Biol. and Med., Vol. 31, No. 8, May, 1934, p. 947.
13. *The Carbohydrates of Gonococcus and Meningococcus*, C. P. Miller and C. K. Boor, J. Exp. Med., Vol. 59, No. 1, Jan. 1, 1934, p. 75.
14. *Immunological Study of Typhoid Polysaccharide*, N. N. Spassky, L. A. Davenfeldt, Br. J. Exp. Path., Vol. XVII, No. 1, Feb., 1936.
15. *Carbohydrate and Nucleoprotein Fractions Isolated From the Brucella Group*, L. E. Topping, J. Path. and Bact., Vol. 39, No. 3, Nov. 1934, p. 665.

ATTEMPTED MEANS OF PREVENTING CORONARY OCCLUSIONS*

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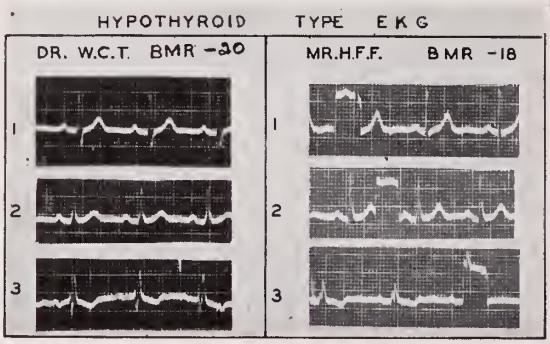
It is a well established fact that more people are dying of heart disease now than previously. Joslin,[1] in his new book on diabetes, makes the observation that in his diabetic patients who are living longer, due to insulin, arteriosclerosis of the coronary arteries is the most common form of arterial disease. He further states that more than one-fourth of all his non-coma cases dying since August 1922, have had heart disease as the final cause of death. Willius and Barnes,[2] state that immediate mortality from coronary occlusions was about 53 per cent, and they believe the early recognition and proper treatment of patients with smaller and less severe occlusions will markedly reduce this mortality rate. Carter Smith and Cliff Sauls,[3] say that the diagnosis of thrombosis of the smaller coronary vessels is much more difficult than that of the classical attacks so well known today. The larger number of patients having these smaller vessels involved, are diagnosed as acute indigestion or angina pectoris, given some nitroglycerin, alkalies, and a sedative, and allowed to continue their way unwarned, and essentially untreated. Herbert Fox,[4] believes that with the attainment of more precise knowledge concerning the factors involved in arteriosclerosis, coronary artery disease may be included in the ever increasing group of preventable maladies. On careful study it appears that one may do something worthwhile for individuals threatened with coronary occlusions. Usually one thinks of coronary thrombosis as a thief who steals upon us in the night and snatches its victim from a state of perfect health. But this is not always true. Certain candidates for coronary occlusion may be recognized. It is a fact that we doctors, myself included, are often guilty of neglect in applying all our knowledge in these suspected cases of coronary artery disease. We console ourselves by thinking it better not to frighten our patients by telling them they are threatened with something that we are not at all sure they are going to have. There is no sure way to foretell just which patients are going to have coronary occlusions. Certain groups of individuals showing certain definite symptoms and signs have been found to have a high incidence of coronary disease. They should be recognized if possible, warned, and treated prophylactically.

The majority of coronary occlusions occur after forty years of age and in certain groups of persons, a large percentage of whom will have shown symptoms or signs that could have been discovered long before the actual accident occurred. Brain workers are more susceptible than those persons engaged in manual labor. It is notably more common in successful persons or those who drive the human machine constantly at top speed.

The first group of individuals in whom experience has shown frequent coronary disease are classed here as hypothyroids. I do not refer to those patients classed as myxedema, but more to those showing basal metabolic rates from minus five to minus twenty. In a former paper on "The Hypothyroid Heart",[5] reasons were given for believing this to be true. This group of patients complain chiefly of easy fatiguability and exhaustion. They usually have low blood pressure and distant heart sounds. Some will show slight substernal oppression or pain after exercise. Experience has shown the one typical electrocardiographic finding to be negativity of the

*Presented before the Section of Internal Medicine at Fairmont on June 8, 1936.

T wave in lead three. Some of these patients will have heart pain after taking even small doses of thyroid extract. Ingestion of thyroid extract calls for increased coronary blood flow, and when sclerosis of the coronaries is marked, then pain will follow. Experience has shown these individuals can be started on very minute doses of thyroid and gradually worked up to the larger doses satisfactorily and with marked general improvement. A theory, based on personal observation, is that coronary occlusions have their earliest beginnings



Note negative T three, the chief or only abnormality consistently found in records of patients having mild hypothyroidism. These records are premonitory of probable future coronary thrombosis.

years before the actual thrombosis, in a state of hypothyroidism. More study is indicated in those individuals having minus ten or minus fifteen basal rates, and they should not be passed up as well individuals. Since conceiving the idea of hypothyroidism as a basis for coronary disease, more and more evidence has been found to substantiate the theory. O'Leary,[6] writing on the pathology of coronary sclerosis and demonstrated in autopsy material, proves that a deposit of free lipoid beneath the endothelium of arteries later results in either fibrosis or necrosis in the young, and atheromatous cysts or abscess cavities in the arterial walls in older individuals. These may rupture, causing thrombosis, or death may be due to inadequacy of the circulation through a narrowed coronary lumen when under conditions of stress, without thrombosis. Trumper and Cantarow,[7] in their book on biochemistry, state, "Hypothyroidism is rather constantly associated with an increase in blood lipoids, the degree of hypercholesterolemia being roughly proportional to the diminution in the basal metabolic rate. A return to normal usually follows the administration of thyroid extract." It is logical to believe, therefore, that coronary occlusions may often occur in hypothyroid patients. It is indicated that when the condition is recognized early enough, preventive treatment will succeed.

The second group of prospective coronary thrombosis patients, are the hypertensives. They usually come complaining of substernal oppression, or pain after exercise. They may not show actual hypertension at the time of observation, but other signs are present to mark them as such. Some of these patients will have already had smaller vessels occluded. Others will be diagnosed as having coronary sclerosis. "It has been aptly said that any pain within two feet of the heart, and brought on by exercise, should be considered coronary pain until proven otherwise."

A third group of patients will have as their chief complaint, acute indigestion attacks, dizzy, blind, and weak spells. These patients deserve a careful study, including electrocardiograms.

The fourth group of patients will have as their only sign of coronary disease, slight changes in their electrocardiograms. These patients will not often be discovered, as electrocardiograms have not become sufficiently popular to justify routine running in health check-ups. Only a small group of doctors seem to realize the value of electrocardiograms. As a matter of conjecture, I would say that three out of four physicians have never had an EKG record made of their own hearts. The results of our routine urine examinations should not be considered more important than the EKG examinations. Records showing low voltage, negative T waves, prominent Q waves, elevation or depression of the RST level, should call for further study. Accompanied by a low blood pressure and distant or muffled heart sounds, these records should be interpreted as premonitory signs of further coronary troubles.

Group five are those patients who have already had one or more typical attacks of coronary occlusion. They are most assuredly in constant danger of further accidents of the same or fatal type.

In all of the aforementioned group of patients, some form of preventive treatment is indicated. The most important single preventive measure is the increased coronary blood flow, produced by theophyllin. It is sold under trade names of euphyllin, metaphyllin, and aminophyllin. These preparations are theophylline ethylinediamine. Fred M. Smith,[5] has reported the most convincing experiments on the efficiency of theophylline as a preventive treatment in coronary occlusions. He first shows by perfusion experiments on the isolated rabbit heart that theophylline ethylinediamine is far superior to any of the other drug preparations used to increase coronary flow. He then used living dogs, and under anesthesia ligated the anterior descending branch of the left coronary artery. Sudden blanching of the area supplied by this vessel was noted. Intravenous theophylline showed almost immediate narrowing of the blanched area, proving the collateral circulation was influenced. In further experimentation by ligation of the coronary, ten dogs were used as controls and nine were given theophylline ethylinediamine daily in their food. Later, autopsy demonstrated the good effect of the drug, by the markedly smaller infarcted area in the treated dogs, as compared with the controls.

Having used metaphyllin, and observed the good effects, over a period of years, in cases of substernal pain on exertion, the idea of trying it as a preventive was conceived. It also became apparent that the good effect was dependent upon the extent of the collateral circulation, and to develop and maintain this required considerable time. The drug is much more effective if applied before coronary sclerosis has occurred to any marked degree. Two cases very similar in every way were selected. Each had electrocardiographic changes which were interpreted to indicate coronary sclerosis. One patient was instructed to take metaphyllin continuously, and the other one was advised to live a less strenuous life with no drug treatment. In March, 1934, approximately one year later, the latter patient was stricken in the night with what proved to be a serious coronary thrombosis with myocardial infarction. Three doses of morphine did not relieve his pain, and he was taken to the hospital and kept under an oxygen tent continuously for several days. He has been taking metaphyllin daily since the night of his occlusion and has been back at work about one year. The other patient had no trouble until recently, when he began noticing some pain on exercise. The dosage of metaphyllin was increased, and he has had no further trouble. One could not hope to prove anything by one such occurrence, but it was significant enough to prevent any further experimenting on suspected cases of coronary disease. In a series of fifty cases taking metaphyllin over a period varying from three to seven years, only one patient has died suddenly, and alone in his hotel room. There was no postmortem examination, and he may have had a cerebral hemorrhage, and not a coronary thrombosis. Metaphyllin is apparently never harmful. The dose may be varied from .1 gram to .6 grams daily, and may be given continuously for years if necessary. It may be procured in tablet form, intravenous, or intramuscular ampoules, and rectal suppositories. Since animal experimentation and clinical evidence indicate good results in cases of coronary occlusion, it is reasonable to conclude that it will prove much more effective in producing a better coronary circulation with larger collateral connections in patients who have only the earliest changes in the coronary circulation. Thyroid extract should be employed in conjunction with metaphyllin for the cases of coronary disease who also have a minus basal metabolic rate. Sedative drugs also have their usefulness as preventives in securing the necessary relaxation of nervous tension which is present in most cases. Alcohol has been shown by White,[9] to have a

beneficial effect in coronary disease. However, if one takes alcohol in fairly large amounts when tired, and in need of rest, the usual result is to acquire new energy, to go on and on, driving the human machine to more and more hours of energetic action, which certainly will hasten the aging process of the human organism.

During any sudden drop in blood pressure, coronary occlusions are apt to occur. It is well, therefore, to avoid spinal anesthesia and the nitrites in patients under preventive treatment.

Exercise properly suited to these patients should be advised, because sedentary living tends to produce a slowing down in the circulation that favors thrombosis and sclerosis of blood vessels. Walking out of doors is neither harmful nor expensive, and should be encouraged with accent on the regularity.

The effect of tobacco in coronary disease is debatable. The majority of observers agree that after anginal pains are experienced, tobacco should be prohibited. It is wise to advise patients to avoid tobacco until some definite proof of its harmlessness is shown.

Relaxation, rest, and amusement are important factors in the prevention of coronary disease. A vacation twice a year is to be encouraged. Instruct patients to cultivate the habit of relaxation, and set aside a few minutes in the middle of the day for rest.

Radiothermy, a new method of heating the deeper tissues by short wave radio energy, has proven most satisfactory in relieving substernal pain brought on by exercise. In a series of patients not responding to other measures alone, the use of radiothermy has given relief from pain for long intervals. Patients have returned and requested more of the same treatment, which is a good recommendation for effectiveness. The method deserves further study. Certainly the collateral circulation of the coronary system should be improved if actual heating of the heart muscle can be accomplished. The following cases are illustrative of the good results from radiothermy:

Case 1: Mrs. J. C., aged 52, was first seen on January 25, 1934. She was complaining of pains in the left knee and right elbow. Blood pressure measured 230 systolic and 128 diastolic. EKG record was abnormal only in that the T waves were lowered, and left axis deviation was shown. She was thought to have a possible coronary disease, although no pain was experienced on exercise. Theominal was prescribed. In April, 1934, she complained of numbness in her left hand and arm at times, especially following exertion. Theominal was continued. Blood pressure on June 4, 1934, measured 180 systolic and 108 diastolic. November 26, 1934, she complained of pain substernally and was unable to walk up the steps of her home without stopping to control the pain. Her EKG record now shows depression of the RT level in lead one, and slight elevation of the RT level in lead three. Left axis deviation is still present and T three has become slightly negative. Metaphyllin did not control the pain and a course of ten radiothermy treatments were given. The patient noted a marked improvement in the pain after three treatments, and was able to go up her stairway without stopping. She returned March 7, 1935, requesting more treatments. Courses of radiothermy treatments have been given her in July and September, 1935, and January and March, 1936. She is able to go about and care for her housework, with help for the heavier duties.

Case 2: Mr. J. M. A., when first seen in July, 1931, was diagnosed as having coronary sclerosis, but no drugs were prescribed. March 22, 1934, he had his coronary occlusion with myocardial infarction. After eight weeks of bed rest and treatment with metaphyllin, he was allowed to begin sitting up and walking some. Three months after the infarction, he was still unable to walk as much as one city block without stopping to relieve the substernal pain and oppression that he would experience. Radiothermy treatments were started, and he began to improve rapidly. He is back at work now, and is thoroughly

convinced that the radio heat treatments were responsible for the final relief of pain.

A suggested plan for preventive treatment of coronary artery disease is as follows: Once the patient has been classed as one apt to have coronary disease or thrombosis, tell him frankly of the possibility of future trouble. Stress the fact that preventive treatment must be continued over a long period of time, if good results are to be expected, one or two years or more in some cases. Metaphyllin should be taken continuously, or with rest periods; one to four tablets each day. Advise outdoor exercise to suit the patient. Suggest vacations and periods of relaxation. If no pain has been experienced, suggest a course of ten radiothermy treatments every three months. Patients having pain after exercise should be given more frequent radiothermy treatments until relieved of pain, if possible. Some cases will require sedative drugs and other special treatment, as in hypothyroidism. Focal infection, or other things, such as environmental factors, should be searched for and taken care of. Each individual should be advised according to the physician's best judgment. Patients should not be frightened. Stress more the good results to be expected than the fatalities you hope they will avoid.

BIBLIOGRAPHY

1. Joslin: "*Treatment of Diabetes.*" Lea and Febiger, 1935.
2. Willius and Barnes: Year Book of General Med., 1935.
3. Carter Smith and H. Cliff Sauls: Ann. Int. Med., Vol. 9, No. 3, p. 317, September, 1935.
4. Herbert Fox: Year Book of General Med., 1935, p. 478.
5. Swann, W. C.: "*The Hypothyroid Heart,*" W. Va. Med. Jour., Vol. XXIX, August, 1933.
6. O'Leary, Timothy: "*The Pathology of Coronary Sclerosis.*" Amer. Heart Jour., Feb., 1935.
7. Trumper and Cantarow: "*Biochemistry in Internal Medicine.*" p. 126, W. B. Saunders Co., 1932.
8. Smith, Fred M.: "*Theophylline in Treatment of Diseases of Coronary Arteries.*" Arch. Int. Med., December, 1935, Vol. 56, pp. 1242-1262.
9. White, P. D.: Jour. A. M. A., Vol. 102, Number 9, March 3, 1934.

Discussion

Dr. W. C. Stewart, Charleston: We have, I believe, neglected to investigate sufficiently the prophylactic possibilities in our degenerative diseases. Our public health men have mostly confined themselves to studies of the bacterial infections and we have not given much time to those diseases which are known to be of a degenerative nature. It is a very good sign to find someone who is thinking along that line and is willing to hazard a few opinions as to what may be done to prevent this progression of the degenerative process. For that reason this paper should and does command a lot of interest.

Coronary occlusion rarely steals upon one like a thief in the night. There are, if you have inquired carefully enough, some premonitory signs and symptoms. Of course we encounter cases where individuals seem to have died suddenly from coronary occlusion without any previous history, but I believe that in the majority of cases some previous history or some physical finding of an abnormal nature could possibly have been found.

That has been borne out by the work of Farr and others in Cleveland who autopsied a large number of hearts in patients who died of coronary occlusion. They found that almost without exception in the fatal cases there was more than one branch of the coronary artery thrombosed, that in addition to the anterior descending branch of the left coronary, they very often could find some part of the right coronary artery also occluded. This led them to believe that in fatal cases there must have been in most of them at some time previously an incident which if it had been inspected carefully enough could have been identified as coronary occlusion.

The next point is the question of mild hypothyroidism in coronary heart disease. The opinion expressed in this paper is perhaps not revolutionary but it certainly is new.

We know that coronary occlusion and coronary heart disease, apparently is much more common in men living a busy life, in mental workers and the high pressure individuals. It is very uncommon in women. It seems to me that those individuals are not often the ones in whom we would expect to have a low metabolism. They are usually of a hypertensive type, and my brief experience would lead me to believe that they probably would not have a low metabolism.

The question of whether or not one can establish in people with mild hypothyroidism, an increased cholesterol of the blood, I think the papers by Roger I. Lee and others have questioned that fact. If one admits that they do have a high cholesterol, I think still there is some question about the proof that the high cholesterol has been responsible for the coronary sclerosis. Those who have investigated the work of Leary and others have come to the conclusion

that a lot of that work was done on rabbits, and rabbits are vegetarians and have no mechanism for taking care of cholesterol. Consequently they were not fair test animals. In the work repeated on dogs and other types of animals it could not be substantiated.

Dr. White in doing work on cholesterol in the development of coronary and other types of arteriosclerosis concluded that he could not see that there had been any definite proof that the elevated cholesterol had to do with the development of arteriosclerosis. I do not know about the mild hypothyroidism personally; it is new to me and I am just a little uncertain about the association of mild hypothyroidism with the large majority of individuals who have coronary sclerosis.

The point upon the use of theophylline is well taken. Dr. Smith's work has been very carefully done and falls in line with the clinical experience and points the way toward considerable benefit to be expected. All that was said about the use of theophylline may be substantiated.

The paper deals with a very vital subject, and I am glad to see the spirit of optimism with which it is treated.

Dr. Arthur M. Fishberg, New York City: The line of investigation Dr. Swann proposes is undoubtedly one that is going to bring results in the future. The important thing is the cause. Although I can bring no good evidence to prove it, I am convinced that there is a great deal to your conception that there is some element of hypometabolism predisposing to these arteriosclerotic changes in the secondary thromboses. That the hypothyroidism *per se* cannot be responsible for the thrombosis is shown by the fact that in the myxedema heart, the typical cardiac infection with hypothyroidism, while they have a great deal of sclerosis, nevertheless thrombosis is rare. There are such cases, but they are in very small proportion. I have seen three or four typical myxedema hearts with complete restoration to normal with the administration of thyroid, and none of them had thrombosis, but from other evidence I feel that hypothyroidism can be one factor predisposing to the development of thrombosis.

After all, the problem may be one of local decrease in metabolism. We only measure the metabolism as a whole by oxygen consumption, but how do we know there are not certain states in which certain tissues can no longer metabolize or burn their cholesterol and for that reason the cholesterol and lipoids accumulate under the endothelium, with ultimate ulceration and formation of a thrombus? That hyperscholesteremia does lead to lipoid changes in the intimal vessels is undoubted evidence of what we have in pneumopathology. In the first place, in cases of lipoid nephrosis in very young children, when they die they usually have a pneumococcus peritonitis, and you will almost invariably find lipoid flecks all over these vessels. We had a case at Mount Sinai, a child of eight, with lipoid nephrosis coming to pneumococcus peritonitis who had a complete thrombotic occlusion of one coronary artery. The arteries throughout the body were sclerotic.

I also reported with Dr. Oppenheimer about eight or nine years ago a case of diabetes with xanthomatosis, and the arteries throughout the body contained large deposits of lipoid—enormous deposits. It was a very young patient, a child of six years of age, with this enormous deposit of lipoid.

How to connect all these things together I do not know, but I am quite confident that something underlying the action of the thyroid affects the accumulation of lipoid in the vessel wall.

About the use of theobromine and all these derivatives in heart disease, I prescribe them myself. I do not know what to give these coronaries, but I personally believe that despite the experimental work of Fred Smith that shows how greatly it increases coronary flow, the value of these drugs in coronary artery disease is purely psychological. Someone from Boston presented a very fine paper in Atlantic City in May experimenting with many drugs on coronary patients. He showed that none of them except for nitrites had any effect at all on the symptoms. He got just the same effect from lactose tablets as from metaphylline. The nitrites produced a definite improvement. My own belief is that enormous numbers of these different proprietary preparations, theocalcin and all the rest of them, have been given for no other than the psychological effects. But, as I said, I prescribe them myself—I do not know what else to give them.

Dr. C. H. Maxwell, Morgantown: I had one very severe case of coronary trouble. It happened to be myself. One hot day after a particularly difficult labor case in the home, I was drenching wet with perspiration. I then went to my office and laid down on the table. The first thing I knew I had a severe pain in my heart. The pain ran down to my wrists in both arms. The pain of angina pectoris generally runs down to the left elbow. I

thought I was going over the river, but I did not. There was not a person around. I got up and sat on the edge of the table. These pains never lasted more than two or three minutes and then passed away. I immediately took an acetanilid tablet, three and a half grains, with a half grain of caffeine. I did not go out in the automobile by myself for several weeks. I always had someone with me for fear another attack would come on, but I have not had one since, and that has been nearly five years ago. Every night I have taken a tablet of acetanilid, three and a half grains, and I have not had a symptom or sign of trouble since. I do not know whether it is in my mind that this does good. Dr. Fishberg says it is in my mind. I give it to my patients. Before that I depended on gelsemium and veratrum viride, and I still do, to reduce the blood pressure and dilate the abdominal blood vessels and draw the blood away from the heart and relieve the danger.

Dr. Walter C. Swann (closing the discussion): I agree with everything that has been said: I cannot disagree with anything. The metaphylline may be no good. Of course it is quite possible that actual coronary flow is not increased by metaphylline. When a patient is getting better, psychological or otherwise, the doctor is going to use it.

I thought of the myxedema heart too. Dr. Farr reported several cases of myxedema heart enormously enlarged, and the only way I could account for that in my own mind was the way he did, (I am talking about mild hypothyroids) that they have fifteen or twenty years before they develop the heart condition. The myxedema patient probably has a much more severe degree, possibly a minus 30. Perhaps he is normal for ten or fifteen years and all of a sudden something happens to his thyroid. There is not time for cholesterol to be deposited in the vessels. He develops the myxedema heart without the formation of calcification, because he has not had his hypothyroidism over a long number of years.

As to the theophylline derivatives, I use theobromine and bicarbonate of soda in capsules about as often as I use metaphylline and the others, and it does not seem to make much difference. Perhaps it is psychic.

I did not mention the low cholesterol diet because I have not used it long enough to know. It appeals to me because of my ideas on the minus thyroid patients. If we could pick up these minus thyroid cases when they had only had it a few years and then cut out their eggs and their butter and their cream, the fat meat, the sweetbreads, and keep them off that diet for the rest of their lives, maybe they would not develop arteriosclerosis, but that is going to be a difficult job to do. I do not believe it would do much good after they already had developed the sclerosis and were ready to have the thrombosis. To cut out the cholesterol then is certainly not going to cure what has already happened.

I think the point Dr. Maxwell brings up is a thing we ought to think about. We see every day more and more cases of thrombosis getting well. It has not been many years ago that we thought a coronary thrombosis was practically always fatal. Maybe we were not recognizing some of the milder cases. I believe today we can say that a large percentage of them are getting well under any treatment.

BOILS AND SUPERSTITION

The idea that "boils are good for you" because the blood is thereby purified still persists in the minds of many people, believing that it is an effort by the body to rid itself of poisonous substances. This, however, is entirely fallacious. Pus forms only because of the presence of germs, and these germs are oftentimes the hardy staphylococci, according to Dr. Herbert L. Herschensohn in an article on this subject in the August *Hygeia.*

The infection may spread to nearly any part of the body, favorite places being the joints, the kidneys and the heart. It is remarkable how many staphylococci can be safely harbored by the blood without causing fatal damage to the body tissues.

People vary in their susceptibility to infection by these staphylococci. Naturally those who are in poor health are far more likely to be troubled by this kind of germ than are those who enjoy buoyant health.

In general, they will settle and multiply in the portions of the body which offer least resistance. Their invasion of wounded parts with the formation of pus is a fact which is only too well known. In children suffering from malnutrition the germs are frequently found in the bones, causing the disease known as osteomyelitis, or inflammation of the bone marrow.

Antiseptics of every nature have been tried, and even today from time to time new preparations are announced which claim higher germicidal value than any substance previously used.

In tincture of iodine, which is used in the preparation of the skin prior to operations, the iodine itself, and not the alcohol in which it is dissolved, makes the solution so effective.

STATUS OF THE ALLERGIC NOSE IN SINUSITIS, HAY FEVER AND ASTHMA*

By J. HOMER MCCREADY, M. D.
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In presenting this subject, I do not wish to renew or to evaluate the authoritative contributions made to allergy by the various other branches of medicine, but to express opinions formed from my own rhinological observations.

The term "allergy" was first introduced by Von Pirquet to indicate a "changed reaction" or "altered reactivity" exhibited by individuals upon contact with certain foreign substances. It is now accepted in reference to all types of hypersensitivity in man, and the medical profession is daily becoming more "allergy conscious."

In the survey of any community, approximately 10 per cent of its people at sometime in their lives have had, or do have, a certain degree of respiratory symptoms which are attributable to inhalant allergens. Very few exhibit the respiratory symptoms alone, however, but show in addition eczema, urticaria, angioneurotic edema, migraine, gastrointestinal upsets or ophthalmological disturbances. Seventy per cent of hay fever sufferers have associated manifestations of allergy elsewhere in their bodies, and 75 per cent have active nasal symptoms out of the hay fever season.

During the past 10 or 15 years, many articles on the nasal manifestations of allergy have been brought out, and in the survey of all this literature a confusing array of synonyms has appeared. Such terms as vasomotor rhinitis, hyperesthetic rhinitis, spasmodic coryza, nasal neurosis, nervous coryza, nasal hydrorrhea and perennial hay fever have been used, according to the predominating symptoms or etiological factor.

The symptomatology of allergic rhinitis is local itching, sneezing, nasal obstruction and watery nasal secretion, with a pathological edema and pallor of the nasal mucosa. While edema and pallor are the predominating characteristics, there may be present a slight redness or congestion of part of the turbinates or septum.

X-ray examination of the accessory sinuses ordinarily shows them to be clear, but if the condition is of long standing, there may be a slight thickening of the sinus mucosa. Mirror examination of the nasopharynx fails to reveal the presence of a purulent secretion, and the watery secretion, of which they complain, may vary in amount from only a few drops to an almost constant stream.

In arriving at a correct diagnosis of the allergic nose, the symptoms, signs and pathology mentioned above are highly important. However, the family history, as well as that of the patient, cannot be stressed too emphatically. According to Hansel, there are 60 to 70 per cent positive cases with familial allergic histories, but the absence of this, or the existence of other allergy in the patient's present or past history, does not rule out the possibility of nasal allergy.

As a diagnostic procedure, repeated cytological examinations of the secretions of the nose and paranasal sinuses are of indispensable value in the presence of complicating infections. The presence of eosinophiles in the secretion is good presumptive evidence of the existence of active allergy, and the demonstration of neutrophiles is an indication of superimposed infection. The eosinophilic-neutrophilic proportions are an index of the nature and stage of infection, and by repeated

*Presented before the W. Va. State Medical Association at Fairmont on June 9, 1936.

observations of the cytology of the secretion, differentiation between acute and chronic infections can be made. The patient's blood usually shows an increase in the eosinophiles of from three to ten per cent, although a normal percentage or even a total absence is not infrequently found during the clinical course.

Histopathological examination of the nasal mucous polypi is also an adjunct to the diagnosis, as they too show characteristic edema and eosinophilic infiltration.

Other conditions, as secondary anemia, hyperthyroidism or hypothyroidism, states of lowered nutrition, or any other disorder that impairs the general health may result in such vascular disturbances or changes in the color of the mucous membrane as to suggest an allergic condition. We see many cases of vasomotor rhinitis on an endocrine basis in patients whose basal metabolic rate is below or above what is considered the normal rate, *i. e.*, minus 10 to plus 10. These patients usually respond to endocrine therapy, and no allergic treatment is necessary.

The skin tests are naturally highly important in the diagnosis. Hansel believes them to be positive in from 80 to 90 per cent of the cases, but that negative reactions do not indicate a non-allergic condition. The most common allergens causing allergic rhinitis are: pollens, especially grasses and ragweed, house dust, feathers, orris root, kapok, animal danders, certain foods and drugs, and bacteria from foci of infection in the patient's body. There are about us certain other physical agents—gas, smoke or chemical irritants—which should also be considered in our differential diagnosis. Then too, many patients suffer from a chronic nasal obstruction and discharge during the winter months, not only as a result of atmospheric conditions, but also from breathing dry, unhumidified air when indoors. In my work with these patients, I have found it more practical to leave the diagnostic skin tests to the allergist, although I feel the day is not far distant when the general practitioner will handle the bulk of these cases himself.

In hyperesthetic rhinitis or true nasal hydrorrhea, the finding of the offending allergen is much more difficult than in seasonal cases. These patients are not directly affected by climate or season, yet some few cases do show a certain periodicity. That same undetermined susceptibility that we must have in hay fever surely applies to the perennial cases. Since quite a large number of these cases are not caused by dust, et cetera, nor by gastrointestinal allergens but by endocrine disturbances, the treatment becomes more complicated. The general physical well-being of these patients is as a rule normal, except perhaps that they are more prone to psychogenic disturbances, the presence of which tends to stimulate the amount of watery nasal secretion.

In the treatment of the various conditions producing symptoms of nasal allergy, each one must be dealt with separately in regard to either local or general treatment.

It has been demonstrated time and time again that, notwithstanding the fact that while local nasal applications of such drugs as adrenalin, epinephrin and ephedrine afford temporary relief, their prolonged use will cause the already irritated mucous membrane to undergo a higher degree of irritation, and for that reason instructions should be given to the patient that they should be discontinued after the first few days.

Vasomotor rhinitis may be self-induced by the use of these drugs in the form of sprays and jellies. For example, a patient contracts an acute coryza, and the use of ephedrine is prescribed by his physician or by some kind friend. He uses it faithfully three or four times a day, and to his great joy experiences a more comfortable breathing space after each application. He becomes so accustomed to the easier breathing that he continues to use the spray long after the acute attack has subsided. His joy is not long-lived, however, for to maintain that free breathing space he is compelled to spray his nose more frequently. The duration of the patency of the nostrils becomes shorter and the nasal obstruction and

watery discharge intensify after each application. As the weeks go by he grows not only more miserable through his nasal discomfort, but complains likewise of such constitutional disturbances as nervousness, loss of appetite, migraine, insomnia and malaise. As an illustration I would like to cite here the case of one well-known physician who came to me complaining of these very symptoms. Being a very busy man, he concluded that his condition was the result of overwork, and he was supported in this opinion by several of his colleagues. The persistent mucoid discharge he attributed to a focal infection in his sinuses. X-rays of his sinuses did show a slight cloudiness of the maxillaries, although not more than is seen in the allergic nasal hydrorrhea patient. To satisfy the doctor, and definitely to rule out the sinuses, I punctured and irrigated the right antrum, obtaining a negative washing. He denied any history of hay fever or previous attacks of nasal hydrorrhea, and it was only after questioning him at great length that he admitted having used ephedrine sprays every three or four hours for a period of about two years. He was in the habit of wakening at various times during the night with his nasal passages obstructed, and each time resorted to the atomizer to relieve the obstruction. Elucidation of this fact simplified the situation, and I prescribed for him a complete rest, with abstinence from all sprays. He acted upon my advice, and in about a month returned to work free from symptoms. While this is probably an extreme case, nevertheless there are dozens of parallel cases in every community, and if the medical profession is compelled to protect the public from overuse of narcotics by registered prescriptions, surely there should be a law enacted to prohibit the indiscriminate sale of the ephedrine and epinephrin compounds.

Shrinking of the turbinates by diathermization or ionization does lessen the turgesence, yet both produce a certain amount of structural change in the mucosa, and if used persistently year after year during the hay fever season, too much space in the nasal chambers will eventually be produced, with a resultant catarrhal condition. Removal of tonsils and adenoids, correction of septal deformity and all sinus surgery is contraindicated during the seasonal attack.

Regardless of the prevailing idea, I always remove the polypi, even though the nasal discharge be proven allergic in character. If the sinuses fail to show pathology, as is usually true in hay fever and vasomotor rhinitis, they are not disturbed, but on the other hand, certain asthmatics with nasal polypi do show an underlying hyperplastic polypoid sinus condition so that the mere removal of the polypi does not suffice. The sinus pathology is demonstrated by the presence of a mucoid or purulent secretion and by means of the x-ray.

In my own practice during the past 25 years, I have either treated or seen in consultation quite a few hundred asthmatic cases, the majority of whom had been referred by the family physician to a consulting internist, who in turn sent them to me for a rhinological opinion. Eighty-five per cent of the referred cases have shown either local nasal or sinus pathology, i. e., either hypertrophied polypoid turbinates, nasal polypi or a polypoid hyperplastic purulent sinusitis.

When the above pathology is present, in my opinion all desensitization and medical therapy is useless; the polypi and diseased sinus membrane must be removed completely. With an underlying polypoid sinus condition, the mere removal of nasal polypi or polypoid turbinates is absolutely of no value as a cure, although temporary results have been effected by their removal or by doing an intranasal ethmoidectomy or window resection. I will endeavor to show by means of lantern slides that most of these procedures are only palliative. It is true that some asthmatics have been cured by the extraction of a tooth, the removal of tonsils and adenoids, or by intranasal surgery. These cases, however, are the exception rather than the rule. Radical sinus surgery in the form of a Caldwell-Luc on the maxillaries, or a Lynch operation on the frontoethmoid and sphenoid regions must

be done if a cure of the hyperplastic sinus-asthmatic patient is to be accomplished.

It is my belief that these asthmatic patients with a hyperplastic pan-sinusitis develop an allergy or sensitivity to the bacteria in their diseased sinus membrane which produces their respiratory symptoms. If this be true, theoretically at least, we should be able to cure such patients by removing the diseased lining-membrane of the infected sinuses. Many times a non-bacterial allergy co-exists, which must be treated concurrently by the allergist.

Of the several hundred Lynch operations Dr. McCollough, my associate, and I have performed in the past five or six years, at least 10 per cent have been done for the relief of a severe asthmatic condition. Previous to the radical surgery, all had had palliative treatment in the form of intranasal surgery, and all were addicted to the use of adrenalin in varying amounts, one patient having used as much as 480 bottles within a period of three years. It is gratifying to note that in this group of patients the percentage of cures or marked improvements, and the fewer adrenalin addicts, far exceed any previous line of operative surgery that we have attempted. I hesitate to quote the exact results, for there is always that "element of disillusionment" in asthmatics, but at the present time 90 per cent of this group are able to attend to their household duties or to engage in some form of employment without the aid of adrenalin.

The administration of autogenous vaccines, the desensitization and the endocrine therapy are carried on by the allergist or the general practitioner.

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REFERENCES

1. Hansel, F. K.: *Allergy of the Nose and Paranasal Sinuses; A Monograph on the Subject of Allergy as Related to Otolaryngology.* C. V. Mosby Co., St. Louis, 1936.

2. Baum, H. L.: *Incidence of Allergy in Otolaryngologic Practice.* Arch. Otolaryngol., 20:804, 1934.

3. Kern, R. A., and Schenck, H. P.: *An Evaluation of the Therapeutic Effect of the Caldwell-Luc Operation in Bronchial Asthma.* J. Allergy, 3:296, 1932.

DIABETES MELLITUS IN INFANCY*

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DIABETES mellitus is a disease of all ages and is more common in males than in females. It is generally conceded that the younger the individual the less hopeful the outlook. It is not our purpose to discuss etiology, pathology or treatment but to review briefly some tabulations of cases and present a case with its report up to the present time. While the disease is quite common in childhood it is rarely found in infancy; this may be owing in some measure to the fact that the condition is not diagnosed.

Strouse, writing in Abt's Pediatrics, refers to statistics collected by Knox on the mortality of this disease in England and Wales. Of 6,496 fatal cases in children only eight were under one year of age. Strouse also gives figures from Wegeli who collected 108 case reports in children three of which were under one year. Morrison in mortality statistics of Boston, 1923, records a case in a newborn from a diabetic mother who also died from the disease.

Griffith and Mitchell in their work on Diseases of Infants and Children, which came off the press last year say: "Even infants in the first year are attacked as shown by a number of reported cases. Stern recorded a case in which the disease appeared to be congenital. Cuno reported one in an infant of three weeks, and Konchman an instance at four and a half months. The youngest cases we have seen were in infants of fifteen and sixteen and one-half months respectively."

In his work on Treatment of Diabetes

*Read before the Pediatric Section at Fairmont on June 8, 1936.

Mellitus which came from the press last year, Joslin speaks of having had five cases under one year of age. He also states: "There are twenty-nine others reported in the literature." He further says: "Diabetes in infancy is characterized by tardy recognition, mildness of course, and relative freedom from complications. The diagnosis of diabetes in infancy is actually not difficult, but confusing because of the lack of history and subjective symptoms. Under one year of age I believe it is safe to say that the disease is only recognized in coma." He still further admonishes that: "A thirsty cachetic baby should always bring to mind the possibility of diabetes." If this advice were kept in mind there would doubtless be many more cases found in infants than have been recognized in the past.

I have personally seen one case in infancy besides the case here presented. Billy E., age 15 months was discovered by Dr. W. J. Leahy of Mannington and immediately sent to Cook Hospital on February 26, 1929. He was in coma when admitted at 6 p. m., and despite the efforts of my colleague, the late Dr. L. C. Davis and myself, died at 2 a. m. without regaining consciousness, eight hours after admission.

The case here presented is that of Rebecca W., now aged 13 months. The fact that she has survived this long is to me surprising and I believe will seem so to you when you have heard her history. She was discovered at the Junior League Clinic in Fairmont. This is supposed to be a well baby clinic and is conducted alternately each Thursday by myself and my colleague Dr. J. L. Blanton, with the help of a Red Cross nurse.

The weighing and measuring which is not always accurate is done by members of the league. At these clinics we see from 15 to 25 babies in a two hour period—sometimes working overtime—so that the work is necessarily superficial and somewhat sketchy.

This child is the first and only offspring of healthy parents. The mother, age 20 years is tall and healthy. I have known her since infancy. The father, age 28 years, is tall and athletic. I have been unable to discover a history of diabetes in either family.

The baby was born prematurely and the record shows that when brought to the clinic aged 17 days, she weighed three pounds, 12 ounces and measured seventeen and three-quarter inches. This was on May 6, 1935. On occasion of the early visits to the clinic she was in the service of Dr. Blanton who seeing the poorly nourished condition endeavored by complimental feedings, orange juice and cod liver oil, to improve her nutrition. On second visit she had thrush, but had gained to five pounds, four ounces—this was on June 13th.

On June 27th she had gone back to four pounds, eight ounces, was vomiting her formula. The thrush had healed, and was given lactic acid milk.

On July 11th the weight was five pounds, one ounce.

On July 17th—five pounds, seven ounces.

On August 1st — five pounds, twelve ounces.

On August 15th—six pounds. Dr. Blanton being out of town, I added vitamin B to the diet hoping for a gain in weight. On his return we discussed the possibility of a leutic taint but rejected the idea.

On August 29th — six pounds, twelve ounces.

On September 12th—seven pounds.

On October 10th—seven pounds.

On October 24th—seven pounds, eleven ounces.

On November 7th—eight pounds.

On November 14th — seven pounds, 14 ounces. From this date she somehow was transferred to my service. Had loose bowels and impetigo of face and scalp.

On November 21st—seven pounds, nine ounces. Impetigo was healed, bowels were checked, and she was put on a thick cereal mixture.

On December 5th — eight pounds, nine ounces. Takes food well, gained one pound in two weeks.

On December 18th — eight pounds, 14 ounces. Has had a cold, now better.

On January 9th, 1936—nine pounds, four ounces. Takes and digests food but does not gain as she should. Remembering Joslin's admonition I asked that a specimen of urine be sent to my office. It was found to reduce Benedict's solution markedly. A one-half dilution was set up in a fermentation tube and the gas formed forced all the urine out of the tube so that no reading was obtained. Because of the rare condition, and for the privilege of following the case, also to avoid the possibilities of contagion by contact at the clinic, I volunteered to do what I could outside the clinic. She should have gone to the hospital but this was not feasible.

She was brought to my office on January 10th, weight was then nine pounds and one ounce; height, twenty-three and one-half inches; age, eight months.

A blood sugar—not fasting— done at this time by Dr. Eugene A. Holland showed 360 m.g. Here was a child not only small for her age but about two and one-half pounds under weight for her height. I reasoned that our only hope was to give a liberal diet and if possible sufficient insulin to take care of it. The parents were taught to give the insulin, test the urine for sugar, and instructed as to the early manifestation of shock and means of combating the same.

Remembering Von Norden's advocacy of the use of oatmeal in feeding diabetics some years ago, oatmeal was substituted for the wheat cereal in the thick cereal formula, and three units of insulin were given tentatively, three times daily and as much food as she would take. Strained vegetables, stewed fruit, orange juice and cod liver oil were also given. On January 14th, the urine still reduced Benedict's slightly but on January 16th there was no reduction.

January 18th—weight, nine pounds, eight ounces. Takes food well, is constipated, urine is sugar free. The baby having shown some signs of shock, the insulin was decreased to two units three times daily.

January 28th—weight, nine pounds, nine ounces. The family had been snow bound. Urine sugar free since last visit and no sugar this day. Takes food well. Playful but no gaining. Another one-half ounce of sugar was added to the formula and a spoonful of Mead's dried brewers yeast added, hoping the added vitamin B would stimulate growth. Blood sugar by Dr. E. A. Holland showed 90 m.g.

February 8th—weight, 10 pounds, seven ounces; height, 24 inches. Had slight insulin shock yesterday relieved by giving Karo syrup. Insulin decreased to two units three times daily.

February 24th—weight, 10 pounds, seven ounces. Had severe cold and cough. Failed to take food well. Slight insulin shock for three days in succession relieved by Karo syrup. Blood sugar by Dr. E. A. Holland showed 110 m.g.

March 14th — weight, 11 pounds, 12 ounces; age, 10 months. Color, good; bright and happy. Eats well. One week ago parents out of curiosity omitted insulin for one day. Next day Benedict's solution was reduced to a bright red. Insulin was resumed.

April 18th—weight, 12 pounds, 12 ounces; age, 11 months. Had another severe head cold, and return of sugar in urine. Now better, hungry. The volume of formula increased and more vegetables are fruit added. Insulin, three units three time daily.

May 4th—weight, 13 pounds, 10 ounces; age, 12 months. Blood sugar by Dr. E. A. Holland showed 115 m.g. Has a suppurating ear, but bright and happy. Takes three units of insulin three times daily to keep urine sugar free.

May 10th—Mother phoned, vomited, had fever, insulin shock, rather severe, relieved by syrup.

May 12th—Eruption of chickenpox.

May 13th—Visited home and observed a severe eruption of chickenpox.

May 20th — Weight, 14 pounds, two ounces. Chickenpox well. Doing better.

June 2nd—Weight, 13 pounds, seven ounces. Five days ago digestive disturbance, vomited, insulin shock, does not eat well, fret-

ful, has lost weight. Temperature, 98.6. P. E., essentially negative; has one tooth. Gums over three other incisors ischemic. Gums incised. Urine negative for sugar. Blood sugar by Dr. E. A. Holland showed 150 m.g. Insulin increased.

June 3rd—Report says playful and taking food well. I have for years deprecated the idea that the eruption of the deciduous teeth caused any of the disorders of infancy. The prompt relief of symptoms after incision of the gums in this case appear to confirm some of the old ideas about teething.

June 7th—Weight, 14 pounds, four ounces. Is bright and happy. Urine sugar free. Taking three units of insulin three times daily. As to the ultimate outcome in this case it is necessary to be very conservative. We are pleased and proud to have the little lady with us in such good condition as you see her.

PERSONAL OBSERVATIONS ON PARANASAL SINUSITIS*

By J. H. MOORE, M. D.
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PROBABLY in medicine today there is no other condition which is as poorly understood and held in as great a fear by the lay and the general medical minds as sinusitis. Paranasal sinusitis, during the late Dr. Coakley's forty years of pioneering in the ear, nose, and throat field, ran the gauntlet from extreme radicalism to excessive conservatism, and then back to a half-way point. There is small wonder at the confusion existing, for today we find five distinct schools of thought in connection with its management; namely, the extreme conservatives who ignore it; the extreme radicals who operate on nearly all cases; the suctionists; the washers; and lastly, the group that employs portions of all the above procedures. Which school is right in the light of our present knowledge, one is unable to say, as insufficient work has been done to date to give to any one line of thought the predominating position. Conservatism with each case guiding the course of treatment seems the most logical. Had Coakley's pupil, Dr. R. T. Atkins, lived long enough to complete his practical researches in this field, we probably would have more conclusive evidence than is at hand at the present time. However, let us look at the subject more closely.

By definition, paranasal sinusitis is an inflammation usually due to an infection of the lining membrane of one or more of the accessory nasal sinuses. Not infrequently, the bony wall itself may be involved in which case an actual osteomyelitis is present.

Anatomically, you will recall that on each side of the nose there are three large sinuses which are paired; namely, the maxillary antra, the frontals, and the sphenoids. Besides these there are the two ethmoidal labyrinths, each of which is divided by the middle turbinates into the anterior and posterior groups of cells.

The majority of these sinuses, from a practical standpoint, begin to develop about the second year after birth and do not reach their mature form until about the eighteenth to twentieth years. Some are present at birth and not infrequently very large sinuses such as the antra will be found in very young children (at three or four years of age). As a general rule, however, the sinuses in children are small in size until the sixth or seventh year, when their dimensions increase and subsequent infections become more formidable factors. They must be borne in mind continually for when coupled with hypertrophic infected adenoids they are easily infected, and act as serious retarding factors in the development and health of the child.

*Read before the Eye, Ear, Nose and Throat Section of the W. Va. State Medical Association at Fairmont on June 8, 1936.

Again returning to the dissecting room, we remember that practically all of the sinuses with the exception of the frontals drain through their hiatuses which are located high upon the nasal wall of the respective sinus. Hence, drainage occurs normally only when the prone position is assumed. Furthermore, the majority of these openings are into the middle meatus, the floor of which slopes downward to the nasal pharynx acting as a gutter. Bearing these mere anatomical details in mind will explain why many patients complain of a stuffy nose, and cough in the morning. It also explains the chronic antrum sufferer's headache or sense of fullness in the face which usually comes on in the forenoon.

The frontal sinuses are drained by small canal-like ducts which are from one-half to three-fourths of an inch in length. These also empty into the anterior portion of the middle meatus of the respective side of the nose, and lying in the floor of the frontal sinus drain more freely when the head is in the erect position. Therefore, in a person with a chronic frontal sinusitis, headache is more commonly present when he arises, and wears off during the morning. Occlusion of the nasal frontal duct or the hiatus of any other sinus causes an absorption of the air in the sinus cavity and results in the severe vacuum headache. This is immediately relieved by probing either the opening or the duct. In these cases transillumination and the x-ray show a negative cavity.

The lining membrane of the nasal sinuses is merely a modified continuation of the mucous membrane of the cavum nasi. Normally, it is about one millimeter in thickness, but under irritation it becomes hypertrophic, due to a hyperemia, and if the said stimulus is continued for a protracted period, it undergoes hydroptic changes followed by a myxomatous transformation, and eventually, fibrous scarring. During the second stage polypi are formed which frequently protrude through the hiatus of the sinus into the nares where, if unmolested surgically, they will cause a varying degree of obstruction. Thus, from a purely anatomical consideration, certain phases of paranasal sinusitis are readily explained.

As to the etiology of these conditions bacteria are unquestionably the first factor to be considered. About twenty different organisms have been isolated from the sinuses. When this group is subdivided into the individual strains of each subgroup over a hundred infecting agents are found. As a side issue, this fact alone shows the futility of employing standard vaccines or sera in either sinusitis or the common cold, for no stock preparation contains more than six to eight individual species which makes the odds about one to twenty that the patient will be benefited.

The second factor in the production of sinusitis is unquestionably nasal obstruction. This varies from a small spur on the nasal septum to a complete occlusion of the nares. It is a known fact that a normal nose packed tightly for 24 to 48 hours very commonly will result in an acute inflammation of one or more of the nasal sinuses. The more commonly encountered forms of nasal obstruction are; namely, infected adenoids in children blocking the nasal pharynx; deviations and malformations of the nasal septum; foreign bodies; edema in the nares due to rhinitis, allergy, etc.; malformations of the cavum nasi; tumors in the nose; and lastly, the condition known as hypertrophic rhinitis. Hence, the importance of correcting even slight obstructions of the nostrils must be stressed and thereby many an obstinate case of sinusitis, and the individual who suffers from frequent head colds will be relieved.

A common cause of maxillary sinusitis lies in the teeth. In these cases, the antrum cannot be cleaned up until the infected tooth is extracted. These dentiginous patients have a foul odor to the nasal discharge and breath, and in such cases a thorough check-up of the teeth by a competent dentist with x-rays is indicated. Osteomyelitis of the maxilla and the accompanying symptoms of sinusitis are common sequelæ of neglected teeth.

Swimming is a large factor in bringing

about infections of the sinuses. This is accomplished through two methods. Water continuously in contact with the nasal mucous membrane will wash off the protective coat of mucus, leaving a raw and easily infected surface. Secondly, in diving a sufficient pressure is easily reached at which water is actually forced into the sinus cavities. Usually, the water in the public bathing pool or stream in which swimming is popular, is infected and the end result is an acute sinusitis. As a prophylaxis it has been found that by giving the nasal membranes a thick coating of a bland oil before swimming, and after the plunge using a mild ephedrine solution to shrink down the membrane and open the hiatuses of the sinuses in many instances swimming can be indulged without the consequential so-called head cold.

As in all medical disorders, sinusitis is more prone to occur in persons suffering from the intoxication of a focal infection. This may lie in the teeth, fallopian tubes, the tonsils, the gall-bladder, the prostate, the colon, or any other point in which a low grade infection is prone to occur. However, in all cases such a focus should be looked for and cleared up if possible. In my own observation, I have found that better results are obtained if the nasal condition is cleared up before a tonsillectomy than vice versa.

Debilitating diseases such as gonorrhea, syphilis, tuberculosis, etc., all render an individual more susceptible to sinus infections as well as to other symptom complexes that are more frequently looked for by the general practitioner.

Neoplasms of the sinuses frequently in their early stages give only the symptoms of a chronic sinusitis. In patients who have reached the fourth decade of life the otolaryngologist must constantly be on his guard for an early malignancy of the sinuses and each chronic case should be suspected, and investigated by radiopaque injections and the subsequent x-ray. Early diagnosis with the radical operation coupled with radiation gives the only chance of cure to these unfortunates.

Alcoholism in a sinus sufferer is as much in keeping with the hope of a cure as the proverbial snowball's chance in the hereafter. All chronic alcoholics have sinusitis and in such cases the continuance of the use of this pleasant pain killer, unfortunately, instead of proving a surcease, really makes the condition more severe.

Persons working in an irritating atmosphere of dust, etc., frequently develop the condition that is known as a chronic vasomotor rhinitis and its sequelæ known as hypertrophic rhinitis. These patients exhibit a pale, hypertrophic nasal mucous membrane, and are unable to breathe through their nares. Upon investigation pus frequently is found in their sinuses due to the nasal obstruction. However, either a change in occupation or a scarifying of the redundant nasal tissue by the actual cautery will render relief if not a cure.

Lastly, but not least of etiological importance in nasal sinus disease is the family coefficient. Sinusitis as has been shown, is an infectious disease and is therefore contagious. Hence, it is frequently impossible to cure the husband's or child's sinusitis unless the mother's is also cleared up. In other words as all contagious diseases are transmitted by contact, whole families are frequently sinus sufferers from one point of contagion. This factor is easily augmented by improper sanitary conditions or faulty hygiene in the home.

Sinusitis *per se* causes in the large majority of cases only masked symptoms which are usually attributed to other factors. Pain which is looked for chiefly, occurs in only about one out of ten cases. If it is present, it is best relieved by salicylates. Opiates instead of relieving the pain usually make the patient mentally aberrant. Antral pain frequently is found in the frontal area and sphenoidal pain may be in the ear, tonsil, tooth, face, the occiput or the vertex. In the cranial nerves involved there are so many ramifications that all logical sites for pain are distorted. Many patients are referred to the rhinologist for frontal or maxillary sinusitis, whose causative seat of infection lies in the sphenoidal or ethmoidal groups. The most common sinus suf-

ferer's complaint is listlessness or loss of pep, plus a slight cough. With these patients the general practitioner frequently exhausts himself in searching for a tuberculosis, which he is unable to find, when only a transillumination is necessary to reveal an infected antrum, et cetera.

Second to listlessness, sore throat even after tonsillectomy and chronic cough are the most common findings in the sinus patient. Both are due to a postnasal discharge from an infected sinus, and many cases of suspected bronchiectasis clear up with the simple treatment of an infected antrum. Frequently a patient will complain of a sense of fullness in the face, or slight visual disturbance. Both are suggestive or sinusitis. Lowered hemoglobin and dizziness are also sometimes signs of sinus involvement. Any cold or cough which lasts longer than ten days to two weeks should suggest a sinus infection and a consultation with an otolaryngologist. A foul breath usually is dentiginous in origin, but not infrequently the sinuses are the etiological factor.

As to diagnosis in suspected cases with the above symptoms, the x-ray and transillumination are not infallible.

For the antra an irrigation through the middle meatus or natural opening gives immediate incontrovertible evidence as to the contents of the sinus. The same is true of the sphenoid, but it is preferable as well as safer to consult x-rays taken in two or more planes to rule out a possible dehiscence of the bony wall.

For the frontal sinus an applicator of 10 per cent cocaine applied in the middle meatus under the nasofrontal duct for ten minutes will usually reveal pus if it is present. This procedure in the acute stage of frontal sinusitis actually is an excellent therapeutic measure until the edema subsides sufficiently so that irrigations may be undertaken. Here the x-ray is invaluable.

The nasopharyngoscope is practically an indispensable aid in the intelligent diagnosis of sinusitis and intranasal conditions. Unfortunately it is used too little by rhinologists.

As to treatment of the paranasal sinuses each case is a law unto itself. In some cases a simple pack is indicated while in others radical operations are all that will give a satisfactory prognosis. Suction is apparently illogical, for if suction is applied to any membrane in the human organism, a hyperemia occurs with a resulting edema. Logically, in a delicate membrane in which the aim of therapy is to reduce the swelling, we wonder how suction can possibly accomplish this. Secondly, in the case of one sinus involved how can suction fail to treat the other sinuses on that side and cause a hyperemia and edema of their membranes with a closure of the hiatuses through which they drain.

A simple washing by any method, in which we feel that the middle meatal route is less drastic than that of the inferior meatal, has proved in the hands of the late Dr. Coakley and his disciples the method of choice. With this treatment the average antrum will clear up in from seven to nine irrigations and if thoroughly clean is apparently as resistant to future infections as the other untreated antrum.

In children up to the seventh year or even thereafter, neosilvol and ephedrine in small amounts used as drops in the nose usually suffices to clear up sinus infections. At the same time, if the adenoids have not been removed, their edema is lessened and the nasopharynx will again become an airway. Argyrol packs tend to hasten the drainage from the sinuses and in obstinate cases irrigations should be resorted to as in adults.

Ethmoiditis is best treated conservatively in the early stages. Dowling's packs followed by a simple nasal irrigation will relieve the majority of these cases and prevent the formations of polypi. Chronic ethmoiditis in the north temperate zone is a difficult entity in which to evoke a permanent cure, and the majority of postoperative cases apparently suffer as much or more than they did prior to surgery. Hence, the scapel is better employed

for other reasons such as asthma, loss of vision, etc.

Autogenous vaccines have proved of definite assistance in clearing up stubborn sinuses, and particularly is this true in the allergic group. A starch free diet is also of decided benefit to these patients.

Correction of nasal deformities as well as general hygienic measures cannot be stressed enough, and radical operative procedures upon the sinuses condemned until at least conservative measures, honestly tried, have failed.

Lastly, bacterial therapy will probably open the doors to a new era in rhinology, but to date is neither safe nor satisfactory.

In conclusion, sinusitis in the hands of the competent otolaryngologist is neither a condition of long duration nor one of dread. It can be cleared up by one of several procedures and the danger of recurrence will be at least not greater than at the time of the initial infection. In all obscure cases of cough, listlessness, lowerings of the hemoglobin, etc., an ear, nose, and throat examination is indicated and the sinuses will be either ruled out, or treated, with a relief of the condition. Nasal packs followed by irrigations and the advice that the patient wash or suck out their own sinuses, without at least the examination by a competent rhinologist is to be condemned.

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Discussion

Dr. S. S. Hall, Fairmont: I wish to compliment the essayist for his very careful study and outline of his article dealing with one of the most complex subjects, in my opinion, to be observed in medicine.

It is interesting to study his resume, particularly as regards the various schools of thought. To me this indicates just one thing—a lack of specific knowledge regarding the condition by the medical profession at large and the individual specialist specifically. I think he stated the proposition quite well when he said, "each sinus disease is a law unto itself."

He mentions many outstanding features, one of which was that regarding transillumination. We have come to believe that transillumination, once the procedure is standardized has a very definite field of usefulness. At the present time, there is no standardization of this technique. The most important field in transillumination is in observing the same patient on various occasions and noting the changes in transillumination and these changes, we have learned, can have a very definite significance and are very specific aids in determining the progress or lack of progress in treatment. However, transillumination, the same as any other single factor, is only an aid and is not infallible in diagnosis.

Vaccines were mentioned. Recently while attending the American Bronchoscopic Society in Detroit, I heard Dr. Chevalier Jackson make the statement that if vaccines were properly obtained and properly prepared they would have a very much higher coefficient of therapeutic value. In my opinion, stock vaccine is a placebo and in our own experience, we do not believe there has been a result more than once in fifty times justifying its use.

Nasal obstruction is mentioned as a possible etiological factor. I am wondering whether or not it would be better to say sinus obstruction. We are convinced that many maxillary sinuses specifically, have inadequate ostia which are congenitally so and this in itself may be a very definite factor in the production of sinus disease and in the persistence of the infection even under adequate treatment once the infection is established.

Neoplasms are mentioned. They are not classified as to benign and malignant. In about 2,500 x-rays of sinuses, we have not observed a single neoplasm of the paranasal sinuses and we have had only one clinically in which we were consultants. This ratio probably represents one in 20,000. We have seen many polypi and serous cysts within the antra but these we do not classify as neoplastic.

The essayist is most discreet in the discussion of sinus symptoms and one is forced to conclude as we all know from our own experiences, that there is no single sinus symptom nor a symptom complex by which one can say there is, or is not a sinus disease and particularly is this so in the latent chronic type.

As to diagnosis, we have come to believe that x-ray with and without halogen opaques, transillumination, accurately obtained with a good history and physical examination will usually establish the presence or absence of sinus disease. As to the halogen opaques, we have found that we can obtain a very definite index of the efficiency of the drainage system within the maxillary sinus by observing the

presence or absence of the oil in the lavagings one week after instillation. It is surprising the amount of opaque media that will be retained in the maxillary antrum for one week which is otherwise almost negative on x-ray. Some rhinologist attribute therapeutic value to the halogen opaques. We have some evidence suggesting that this may be true. We are not convinced however, that it is justifiable on the basis of literature or experience. In an article prepared by Dr. Thomas and myself in 1935, we made the statement that "if we are to advance the knowledge of chronic sinus management at a more rapid pace and on a more rational plane, we must correlate all the data on our patients, general examinations, laboratory results, special medication used both locally and symptomically and especially repeated x-ray of the sinuses with and without contrasting media and keep this data for 10 to 30 years and longer for further deduction both by ourselves and our students. By this means only do we have a way opened for a broad, honest, convincing approach to an almost embarrassing phase of rhinology." This statement today is just as true as it was at the time we made it.

SOME THOUGHTS CONCERNING EARLY CONGESTIVE FAILURE*

By R. H. WHARTON, M. D.
Parkersburg, W. Va.

TO SPEND time on further discussion of congestive failure may seem unnecessary to many, and to others a less interesting subject than some of the more recent methods of treatment of certain forms of heart disease. During the last three years surgeons have taken a greater interest in cardiac work and have brought forward several helpful procedures in the management of certain types of cases. There also has been enough experimental work to lead us to hope for a wider practical application of these methods. I refer to total thyroidectomy, paravertebral alcohol injection, pericardial resection and the establishment of collateral circulation in cases of coronary artery disease. Interesting and important as these may be they are only applicable to a small number of cases and then only in conjunction with a well-planned medical regime. They are used only as an aid to, rather than as a substitute for this medical management. In a review of all the methods devised during the last decade to aid the cardiac patient it has been said that there are only five distinct advances; the surgical methods as listed before plus two medical procedures, that of quinidine therapy and the use of mercurial diuretics, salyrgan and mercupurin. Of all these methods only the latter is applicable to a very large number of cases and then this has its greatest value in those that are moderately too far advanced. Therefore, it is necessary in the early cases to depend on the older time-honored, but also improved methods of management, since cases that can be treated by these other methods are either beyond the stage of early failure or may be expected to return to it relatively soon.

Congestive failure is the term that better describes what used to be referred to as myocarditis. It is the term applied to the signs and symptoms produced by the stasis of circulation in the various parts of the body due to insufficiency of the heart muscle under various kinds of strain. Whether the onset be slow as in long standing hypertension or valvular disease, or rapid as in coronary thrombosis or trauma, the fundamental mechanism is the same.

Congestive failure is a functional condition and has no characteristic pathology. The cardiac muscle is subject to fatigue and in failure shows only the abnormal chemical

*Presented before the W. Va. State Medical Association at Fairmont on June 10, 1936.

state that exists in any other exhausted muscle. The structural change that is present consists of first dilatation and then hypertrophy of the muscle cells. Fibrosis of the myocardium is less marked than one would expect and is in direct proportion to the amount of coronary narrowing.

With reliable statistics showing a marked increase in heart disease and with a better understanding of the methods of protecting the younger cases from intercurrent infections we are assured of seeing as time goes on, a greater number of cases of failure. Fifty per cent of diseased hearts develop failure. The early diagnosis of heart disease and its prevention has been stressed and in every way ranks first in importance. But even though the existence of heart disease is known and a definite schedule of activities is adhered to with the hope of postponing the day when failure will develop, we must be constantly on the alert for the early signs of this failure.

When a patient comes to you with edema of the extremities, passive congestion of the liver sufficient to cause definite enlargement, râles at the bases of the lungs and distended neck veins, congestive failure is well on its way and one does not have to examine the precordial area to establish a diagnosis. While treatment at this time often gives brilliant results a higher myocardial reserve could have been maintained had proper treatment been given earlier.

What then are the symptoms and signs that we are to look for in early failure? These are quite easy to enumerate but often are more difficult to elicit and evaluate. The one and only symptom is that of dyspnea which apparently arises from anoxemia of the respiratory center and comes on with the usual activities of the patient. A reduction in the vital capacity of the individual is the only early sign. A very careful history is often necessary to bring out the existence of slight dyspnea and a complete and careful examination of the respiratory tract is necessary to rule out causes for this symptom from that source. Once this is done, there is again the problem of differentiating between the dyspnea of heart failure and that of poor physical training and neurocirculatory asthenia.

The treatment of these early cases, as well as those that are further advanced, is not attempted with the hope of a cure as in many other diseases, but rather is attempted to diminish suffering, to prolong life and to increase the usefulness of the patient for as long a period as possible. It is felt that a well-planned treatment for a coöperative patient may be expected to add from two to five years to his comfortable existence. This management is an individual problem from the standpoint of rest, diet and habits. There are certain fundamental rules governing these with which we are all familiar and the variations of these can only be arrived at by a study of each patient. I do not intend to take the time to detail these but only want to point out that rest is still the most important therapeutic measure. Yet we must realize that rest can be overdone. We must allow each patient as much exercise as he can take reasonably and safely, because this is essential to the general well-being and to the maintenance of the tone of the peripheral vascular system. We must carefully guard against the development of a cardiac neurosis, which all too often, both for the patient and ourselves we have helped along in the past.

What then can be said of the drug therapy in these early cases? Here, as in years past, digitalis holds first place, and the well standardized preparations of this drug that are available from reputable pharmaceutical houses give us a more efficient and better controlled form of therapy than we have had before. It has even been suggested that this drug may be of value in delaying the onset of failure in diseased hearts. Many of you are familiar with the article of Dr. Henry A. Christian in the *Journal of the American Medical Association*, March 18, 1933, in which he advocated the use of digitalis to retard cardiac hypertrophy. In this paper he states: "It is the stretching of the muscle by an increased load that is a stimulus to hyper-

trophy. Stretched cardiac muscle enlarges the cavity surrounded by the muscle. For a time hypertrophy keeps in balance with increasing load resulting from enlarging the cardiac cavities. In the heart, however, with muscle forming the wall of the cavity, soon there is a disproportion between thickness of muscle wall and size of surrounded cavity and a lag ensues in hypertrophy in relation to the work demanded of the myocardium, followed by a decreasing efficiency of heart function." With these changes in mind it would seem that in most cases cardiac enlargement is the forerunner of failure. Citing the experimental work of Cloetta on animals and his own clinical observation, Dr. Christian concludes that digitalis retards hypertrophy, regardless of the type of lesion that tends to produce it, and thus delays failure.

This reasoning to me seems logical and I believe is generally accepted. The criticisms that followed the appearance of this paper were not concerned with this conception of the structural changes but were directed at the comparison of digitalis as a specific agent to those of other agents such as insulin in diabetes and liver in pernicious anemia.

Whether or not we are willing to accept the use of this drug as a prophylactic measure we all recognize its therapeutic efficiency. With the standardized preparations available today the small tonic doses of the past should be discarded and the drug given to the point of full therapeutic effect. The amount required to do this varies but the old rule of a grain and a half of the powdered whole leaf or oue c.c. of the tincture for each ten pounds of body weight only roughly approximates it. It has been my own experience that in most cases a little more than this amount is required. In these early cases there is no need for rapid action of the drug so it is probably better to arrange the dosage so as to obtain the full effect in four to seven days, that is, to give a grain and a half three to five times a day. The more important point is that once the patient has attained the full therapeutic effect, the drug should not be discontinued, but a maintenance dose be given for an indefinite period, probably for the remainder of the patient's life. The amount required for this can be established only by the trial method but will usually be from one to three grains daily. An occasional patient will develop nausea so that the dose of the drug must be reduced or discontinued entirely. As soon as this is done these untoward symptoms quickly subside and the patient is no worse for its having been tried.

In patients with diseased hearts, when in spite of other measures taken, sufficient hypertrophy occurs to be detected, we can attempt the prophalactic use of digitalis as suggested by Dr. Christian. As to the efficiency of this as individuals, we can determine only after years of study. But in cases of enlarged hearts where there are questionable signs and symptoms of early failure, this drug often is a valuable therapeutic test and one that can quickly help us to determine the correctness of our diagnosis without the aid of more elaborate methods.

Discussion

Dr. I. I. Hirschman, Huntington: I fully agree with the essayist that in many of our cases, whether they are cardiac or otherwise, we often become rather careless in taking our history. A very careful history taken in a patient suspected of cardiac disease is equal to and very often more important than the actual examination.

We must recognize that the individual stands as a unit. I do not think we can regard cardiac cases in groups or numbers except as we attempt to gather statistics pertaining to certain lesions.

For years we have been attempting to determine some form of function test that will give us a clue as to cardiac impairment, and I am sorry to say that nothing specific has been evolved to date. About twenty-two years ago when I was with the Cardiac Clinic at Hopkins, Dr. Brown and Dr. Carter and myself attempted very diligently to work out some form of effort test. We tried by having the patient raise a certain weight per foot pound. We thought at first we had something that was worthwhile, but we found that it was not accurate.

We do something today that helps but it is not standard. We get the patient to hop on one foot

twenty times and then on the other, taking his pulse before doing so, at rest, taking his blood pressure at rest, then taking his pulse rate after the test, and his blood pressure. In a normal patient (I dare say the rule does not always hold true) there should be a rise in the systolic pressure of fifteen or twenty millimeters and there should be a corresponding increase in his pulse rate, fifteen or twenty beats, with a return to normal or to that of rest within a period of two, not over three minutes.

Very often in attempting to make a diagnosis of a myocardial disease in our early cases we confuse our cases of effort syndrome. Those of us who have had more experience know the number of cases that we saw in men who presented breathlessness, tachycardia, even fatigue, some precordial pain, all of the early manifestations of a true myocardial involvement, that we classify as our effort syndrome cases, many of them falling into the group of so-called neurocirculatory asthenia. They were the types of individual that came into the army service, individuals who had led a sedentary life, and then being put to severe drilling, and so on, having the asthenic type of build, the narrow chest, the narrow costal angle, the long chest, the ptoses that go with that type of individual, could not withstand the rigors that were demanded of them, and they gave forth these symptoms which Lewis so clearly describes and which we recognize today.

In my consultation work at the Veterans' Administration Hospital, I am fortunate enough to see twenty cardiac cases a week. At times I have found it very difficult to determine in my own mind whether a patient had a mere effort syndrome or whether he had the beginning evidences of a myocarditis.

Very often we place too much stress on murmurs. I think we have gotten away from that. A murmur means nothing more than that there has been an impairment to the valve, and that it is permanent. The important thing that we are concerned with is the character of the heart muscle.

One word just as a warning with reference to the electrocardiogram. Unfortunately, I am afraid, many of these instruments are getting into incompetent hands. It is not that the machine does not take a good electrocardiogram, but unfortunately we have misinterpretations, and it is creating a lot of havoc. Men are being told that they have myocardial conditions because of the misinterpretation that results from a slight slurring here and there when in reality I doubt very much whether or not they have.

At the same time we must be aware of the fact that if we are to wait for definite evidences in the electrocardiogram to make a diagnosis of myocardial disease, it would be comparable to a wait for positive sputum in order to make a diagnosis of pulmonary tuberculosis.

Dr. Wharton brought out very nicely the cardinal symptoms of cardiac failure. Of course, one of the most important symptoms is breathlessness, and there again the individual is a unit. If you have a man who is a laboring man, you cannot subject him to certain tests and expect that man to respond in the way of breathlessness as you would a banker or some executive who has led a very sedentary life. I think a man's vocation in combination with the functional test is very important. The average individual who is able to walk a flight of stairs with very slight shortness of breath, is considered normal. When that same individual on careful questioning says, "I find it difficult to climb the stairs at home," or "I find when I walk fast I get short of breath and have to stop," or "I could play eighteen holes of golf without any effort and now I can only play nine," I think that is a very important clue to look into the question of some myocardial condition, not losing sight of the fact that there are other conditions that may give the same symptomatology: fatigue and exhaustion, a heavy feeling of the legs, and weariness, fullness in the head, and not infrequently pain over the precordial region. The character of the pain is dull. It is not the type of pain analogous to what we find in angina pectoris or coronary disease.

Cough in the early congestive failures is a very important symptom. Pulmonary conditions should be ruled out. First the cough is just sticky. Later as the congestion becomes more pronounced the patient has a serous and sometimes a prune-juice sputum in the more severe cases. Very often in the early congestive failures they complain of tenderness over the liver on palpation. Enlargement in the early cases is difficult to determine, but you can, if you look for it, on percussion usually through the midline, detect it.

One of the most important symptoms that I find in congestive failure is the question of our venous pressure in these cases. The direct recognition, of course, is difficult to determine, but we can determine it indirectly by observation of the external jugular vein. If you observe a patient with an early

congestive failure, you will find the fullness of the external jugular. If you take that patient with congestive failure a little more marked and bring him more into the recumbent position, the external jugular becomes more prominent, so much so that when he lies perfectly flat it will stand up from the clavicle up to the angle of the jaw with a very distinct, marked fullness.

I think the diet is a very important factor. I usually give my very severe cases about 800 calories a day, a low caloric diet, with limitation of fluids not exceeding 1400 c.c. In the moderate cases as they convalesce I raise that to 1500. I also insist on my cardiac cases irrespective of how well they feel, resting in bed one day each week.

Dr. H. R. Sauder, Wheeling: Dr. Wharton is to be commended on his paper, particularly because he has brought up this very important subject of early congestive heart disease. We are not going to get anywhere unless we begin to recognize this myocardial degeneration before we come to the point of a break.

There should be no argument about the point that if heart disease is treated before compensation is broken, we can expect far superior results to what we would encounter if we delayed the institution of treatment. This is particularly true in the type of degenerative heart disease that so often makes its appearance after the fortieth year.

This problem of diagnosis of so-called incipient heart disease is by all odds one of the hardest problems that we meet. It seems to me that we do not get very far. We gain little if we spend our time searching for the typical, so-called classical symptoms of heart disease. The symptoms and the signs are very often conspicuous by their absence.

It seems that a more reasonable effort might be made to try to uncover the etiological factors which if they progress will be eventually of injury and damage to the heart muscle, such as, for instance, obtaining the history that the individual had a rheumatic infection or some other significant infectious process, or that he has or has had hypertension, or that he has signs and symptoms of syphilis, or perhaps thyrotoxicosis, either at the present time or in the past, or that he has arteriosclerosis of extracardiac distribution. You have a hard problem to demonstrate coronary sclerosis in this very early stage.

I leave for last, but by far the most important, the attempt to uncover any positive hereditary influences. This appears to be a highly important subject in the type of heart disease that we encounter after the forty-fifth year; the type that is due to coronary artery disease.

To postpone the treatment of heart disease until a patient becomes water-logged and orthopneic before treatment is begun is quite comparable to postponing the treatment of typhoid fever until intestinal perforation has occurred.

There are many healthful signs. At the present time there is a growing interest in this problem of the study, particularly the diagnosis, of the so-called incipient stage of heart disease. I am in hopes that it will progress, because I think therein lies our hope of the future.

Dr. C. H. Maxwell, Morgantown: I have a son studying medicine at Harvard. He said he saw the Professor give a whole ounce of tincture of digitalis at one dose. If that digitalis was any account the man would have been dead in two hours. That is what is the matter with digitalis. If it is made out of dry leaves that are inert it is of no value. Digitalis to be of some use must be made of the green drug. We have preparations today of the green drug. There is one made from a thorn plant, and after giving that tincture of digitalis for weeks and weeks you will get results from it in heart trouble. It is a tonic; it is not a heart stimulant at all.

I had a patient teaching in the University whose heart was six inches across, and I put him on digitalis and the size went down more than an inch in a couple of months. We give it in all chronic heart trouble. You do not have to give a big enough dose to upset the stomach. If you get a tincture of digitalis that is effective you will be very much elated with the action of digitalis. Digitalis does not save all of your cases, but it is of great advantage.

DIABETIC DIET

The diabetic today has a banquet every meal, compared to those with the disease years ago, and not many years ago either, says Florence Harbaugh Diamond in her article "Home Canning for the Diabetic" in the August *Hygeia.*

It is now possible and even easy to can fruits at home for the diabetic person and have them delicious. If care is taken in the canning process, there is no need to fear spoilage.

Any fruit may be canned with the use of saccharin but those which have the most natural sugar will sweeten more easily with saccharin than tart fruits.

RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN WEST VIRGINIA*

By WM. C. STEWART, M. D.
Charleston, W. Va.

RHEUMATIC fever each year is causing the death of many children and like another but more widely publicized disease — infantile paralysis—is leaving countless others maimed and crippled to carry on against odds which are prone to become more unequal with the passing of time. That few of those children who develop the disease die in the initial attack is not the good fortune which it might seem at a glance to be, for polyarthritis without some cardiac involvement is not rheumatic fever and the survivors must face recurrence of the acute process with further and perhaps fatal cardiac damage or at best a period of years of limited activity before the unequal struggle is terminated by cardiac failure or subacute bacterial endocarditis. The disease must of course be recognized before measures can be instituted to, if possible, prevent recurrence and to protect the heart through adequate periods of rest following the acute attacks. It is a fact of some importance that often cardiac conditions will be encountered which are typical of rheumatic heart disease, but no history of rheumatic fever or chorea can be elicited from the patient or parents. The nature and incidence of rheumatic fever has long been known to vary with the climate and geographical location of the community, and it is for this reason that some discussion of the disease and its behavior in West Virginia is considered timely.

Studies of the disease in many localities have been contributed to the literature but none has been forthcoming locally. These studies[1 2 3] have clearly shown that the more temperate regions of the United States have a lower incidence of rheumatic fever and rheumatic heart disease than those where the climate is more rigorous. It may be that this commonly accepted fact has been overemphasized locally and that the physicians of West Virginia are not aware of the incidence of rheumatic heart disease in this State. If the problem is approached from several angles it may be seen that West Virginia should show an appreciable incidence of the disease. At the University, Virginia hospital, which is in about the same latitude as West Virginia, 21.9 per cent of all cardiac patients admitted were suffering with rheumatic heart disease.[4] In Nashville, Tennessee, which is in an even more southerly latitude, 10.5 per cent of all cardiac admissions to one hospital were suffering from this type of disease.[5] It is also true that the terrain of West Virginia is a suitable medium for the disease. Dochez[6] found that in Jamaica, British West Indies, almost all the cases of rheumatic heart disease encountered were in natives who came from the hill country of the vicinity. Certainly our State is well qualified in this respect and, in addition, the numerous dark congested mining camps provide the social and living conditions in which the disease has been found to be most prevalent.

There are several peculiarities of the disease which may throw some light upon the local situation. The first and most important of these is that the acute initial or recurrent attacks are milder in this locality with its fairly mild climate and are thus less likely to attract attention from the family and the physician of the patient. That this is true receives strong support from the experience of Jones and Bland at the Good Samaritan Hospital in Boston. They have sent each winter a group

*Read before the Kanawha Medical Society at Charleston on May, 1936.

of rheumatic children to Miami Beach in Florida. These children showed far less tendency to suffer from recurrences of their rheumatic fever, and when recurrences did occur they were much milder. That the acute rheumatic phase of the disease is milder in the more temperate climates than further north is further borne out by Winans and Dunstan[7] who recently reported that in North Texas they were rarely able to elicit a history of rheumatic fever or chorea from cases of rheumatic heart disease. Thus added significance is given to such vague complaints as "growing pains" and every rheumatism in a child must be suspected of being rheumatic fever until it is proven otherwise.

It seems fair to expect from the above that, geographically, West Virginia may be expected to have a considerable incidence of rheumatic heart disease, that rheumatic fever when it does occur will often be mild and that many cases of rheumatic heart disease will be encountered in which no history of rheumatic fever or chorea can be found.

Inquiry at the Registry of Vital Statistics of the West Virginia State Department of Health reveals that the statistics on rheumatic fever and rheumatic heart disease are in a very sad state. No figures upon the incidence of, or deaths from rheumatic heart disease are available. In the last five years the number of deaths from acute rheumatism has been steadily increasing. In 1931 there were only four deaths reported as being due to that cause. In 1932 there were twenty-four deaths, in 1933 the figure had risen to thirty-one, and in 1935 the number who died had increased to sixty. This increasing number does not mean that the disease is rapidly on the increase but that it is being recognized and reported more often.

I believe that there is an urgent need for a better understanding of the incidence and nature of rheumatic fever and rheumatic heart disease in this State. On one hand many of our physicians fail to recognize the acute initial disease and hence do not insist upon the important period of rest after subsidence of obvious symptoms and at the same time do not appreciate the tendency toward recurrence and the crippling of the heart which may not make itself manifest for a number of years. In addition, it is not universally appreciated that except for rare cases of congenital heart disease, all heart murmurs in children which are of any importance have resulted from rheumatic fever or chorea. Thus if a better understanding of the stigmata of rheumatic heart disease is acquired many children who have been made invalids because of a functional heart murmur could be saved this unfortunate experience.

In an attempt to throw some light on this subject I have summarized my findings in sixteen cases of rheumatic heart disease which have been encountered during the last eighteen months. First, let me say I believe that, despite the lack of any figures for comparison or control, this represents a surprising incidence of the disease.

A good deal has been written earlier in this paper about the fact that in milder climates there is a lower incidence of acute rheumatic fever in comparison with the amount of rheumatic heart disease seen. Of the sixteen cases of rheumatic heart disease encountered two had acute rheumatic fever at the time and one was suffering from a recurrence of an old rheumatic infection. Of the remaining thirteen cases, six had no history of rheumatic fever, chorea, "growing pains" or any illness associated with a sore throat which could be identified as rheumatic fever. Six cases had definite histories of rheumatic fever and one had a history of chorea. I feel that to find six cases of rheumatic heart disease in a group of thirteen cases, without a history of rheumatic fever or chorea, is unusual and is probably not a fair picture; but at least it strongly suggests that the acute initial illness in this locality may be very insignificant. It is of interest that in five of the thirteen cases of rheumatic heart disease, all of them having been seen by one to several physicians previously, none had ever been asked about a previous rheumatism or chorea. Also, it deserves some mention

that one patient with clear cut mitral stenosis and cardiac failure had been diagnosed erroneously as having pulmonary tuberculosis and another with mitral stenosis and ascites had been diagnosed as being pregnant.

Rheumatic fever when it did occur, as in two of these cases and as it recurred in one of them, was not different from the disease as observed elsewhere. It seems likely, from the difficulty in securing any history of previous acute illnesses in six of these cases and in view of the experience of others,[3] that the initial rheumatic fever in temperate climates is often very mild. However, when the full-blown picture does develop it is apt to be a very severe type of the disease. One of the cases reported here illustrates that point and because it also exhibited many of the classical features of the disease it will be reported briefly.

The patient was a fourteen year old girl. Lewis[5] and Swift[6] express the opinion that mitral stenosis, the telltale scar of rheumatic fever, is more common in women than in men. Her previous history revealed no significant illnesses except an occasional sore throat. Two weeks before admission she had a severe sore throat and a swollen, red, extremely painful right ankle. Almost immediately the left ankle became swollen and tender, followed by the left wrist. These joints, as is usually the case, became so tender that the patient would not tolerate the changing of the bed clothes. Because she developed a distressing substernal pain associated with great dyspnea and a slow pulse she was brought to the hospital. Her temperature was 103° at the time of admission, and her pulse was 90 with respirations of 35 per minute. Physical examination revealed a well developed and well nourished girl with anxious expression and cold perspiration over the body. The throat was red, particularly over the tonsils which were moderately enlarged. The neck veins were slightly distended. The lungs were clear. The heart was not enlarged to percussion. Its action was slow and regular but vigorous and heaving. There was a palpable to and fro thrill over the precordium and auscultation revealed a similarly timed rough pericardial friction rub. The heart sounds could not be made out because of the rub. There was no tenderness over the liver. The right ankle and left wrist were swollen, red and tender. There was no edema, and no subcutaneous nodules could be found over the exposed tendons.

This case offers the skeleton for a discussion of many aspects of rheumatic fever. The association of sore throats and rheumatic fever is too constant to merit comment. That the specific causative organism is located in the throat is still another matter and is quite definitely to be questioned. Those who are busy delving into the cause of rheumatic fever still suspect the streptococcus and most often streptococcus viridans. Recent theorists, however, fondle the idea of an allergic disease since the development of arthritis and fever is usually preceded by eight to ten days by some infection. That this infection may even stimulate a non-specific reaction is supported by the work of Jones and Bland[10] who found that recurrences of rheumatism could be consistently produced in children eight to ten days after the intravenous injections of small amounts of typhoid vaccine. The presence of substernal pain in this patient immediately suggested pericarditis which proved to be the case. To understand the disease rheumatic fever one must always bear in mind that it results in a pancarditis, that endocardium, myocardium and pericardium are all involved. This, of course, does not imply that in every case there will be a pericardial friction rub, nor does it imply, as we shall see later, that every case is left with damaged heart valves. An electrocardiogram was done in this case and revealed the extremely unusual rhythm of complete heart block with dissociation of the auricles and ventricles, the auricular rate being 75 while the ventricular rate was 90. Characteristic and of great diagnostic value is the fact that in rheumatic fever there is a first degree heart block with a lengthened P-R interval. This patient was found to be suffering from a particularly severe derangement

of the conduction mechanism resulting in a third degree heart block with complete dissociation of auricle and ventricle. She was obviously a gravely ill girl and her subsequent course is of interest. She was given sodium salicylate gr. XX and sodium bicarbonate gr. X four times daily. If this amount had not proven enough to control the joint pain, the salicylate would have been increased up to 120 grains daily. However, she responded promptly and the joint pain disappeared and shortly afterwards her temperature began to subside. On the fifth day after admission her auricles and ventricles returned to a normal sequence and her pericardial friction rub gradually faded and disappeared during the second week after admission. She has been seen at two month intervals following a four month period in bed. The heart is normal in size, and there are no significant murmurs. Her tonsils will be removed this summer, and it is hoped that recurrence of her rheumatism can be avoided.

So much for the acute form of the disease. An appreciation of its behavior is most important, but this small series of cases suggests that rheumatic heart disease is encountered about four times as often as rheumatic fever in this locality. Therefore, an ability to recognize and evaluate the stigmata of rheumatic heart disease is very essential.

The thirteen patients with rheumatic heart disease averaged thirty-one years in age. All of these patients except two showed some cardiac enlargement, and eleven out of thirteen showed mitral stenosis, the characteristic lesion of this type of heart disease. Two of them had lesions resulting in aortic regurgitation alone and five of them had lesions of both the mitral and aortic valves. These are about the same findings as reported in larger series of cases. Auricular fibrillation commonly occurs in those suffering from mitral stenosis, and three of this group of patients were suffering from this disorder. This arrythmia is known to be a late development[11] and the average age of the patients in this group so afflicted was thirty-four years. The most common cause of ascites in individuals under thirty years of age is mitral stenosis. The average age of three patients in this group with ascites and mitral stenosis was twenty-one years. It is not uncommon for individuals with mitral stenosis to have hemoptyses and four of this group of patients had suffered this experience. Death to those suffering with rheumatic heart disease comes most often as a result of cardiac failure or subacute bacterial endocarditis. Three of these patients died of congestive heart failure, and one died of subacute bacterial endocarditis.

The true picture of rheumatic fever would not be outlined unless the one case of recurrent rheumatic fever in this series were given some mention. The first acute attack is usually not fatal and valvular damage may be slight, but there is always the danger of subsequent attacks with further valvular and cardiac damage. Shapiro[12] in a large series of cases in Minneapolis found that 48 per cent of all cases of acute rheumatic fever may expect one or more recurrence. It has been pointed out that recurrences will probably be less common here than in a more rigorous climate, but nevertheless it is one of the attending physician's most pressing duties to guard against and watch for recurrence of the acute rheumatism.

Summary: Rheumatic fever is a terrible crippling disease and with its offspring and associate — rheumatic heart disease — is important in any community. This locality is geographically, climatically and socially qualified so that we should expect a considerable incidence of the disease. It is my belief that its incidence and characteristics are not thoroughly enough appreciated. The short series of cases reported here reveals that the acute stages of the disease are apt to be mild or absent but that the subsequent rheumatic heart disease is surprisingly common. Rheumatic heart disease as found in this vicinity is clinically no different from that found elsewhere.

BIBLIOGRAPHY

1. Seegal, D., and Seegal, B. C.: J. A. M. A. 89: 11, 1927.

2. Faulkner, J. M., and White, P. D.: J. A. M. A. 133:425, 1924.
3. Nichol, E. S.: Journal Lab. and Clin. Medicine, Vol. 21:6, 1936.
4. Wood, J. E. Jr., Jones, T. D., and Kimbrough, R. D.: Amer. Jour. Med. Sciences, 172:185, 1926.
5. Laws, C. L.: Amer. Heart Journal, 8:608, 1933.
6. Quoted by Dr. M. H. Dawson in discussing—Nichol, E. S., in Jour. Lab. and Clin. Medicine, Vol. 21:6, 1936.
7. Dunstan, E. M., and Winans, H. M.: Tex. State Med. Journal, 31:444, 1935.
8. Lewis, Sir Thomas: *"Diseases of the Heart"*, The MacMillan Company, 1933.
9. Swift, Homer F.: In Cecils Text-Book of Medicine, 2nd Edition, 1930.
10. Jones, T. D., Bland, E. F.: Journal Clin. Investigation, 14:633, 1935.
11. DeGraff, A. C., and Lingg, Claire: American Heart Journal, June, 1935.
12. Shapiro, M. J.: Journal of Lab. and Clin. Medicine, Vol. 21:6, 1936.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

When should a lung compressed by artificial pneumothorax be allowed to expand? Dr. Dundee of Cornell University Medical College discusses the factors to be considered in making the decision in an article published in The British Journal of Tuberculosis. Quotations and abstracts of the article follow:

When Should Refills Be Stopped: Relapses after the completion of pneumothorax treatment are much more dangerous than was the original lesion before treatment commenced because only a very small percentage of cases can get effective pneumothorax in a succeeding attempt, due to the new pleural adhesions formed after the lung re-expands.

The longer the treatment has lasted the fewer are the relapses after re-expansion. Dufault and Laroche found the cure was maintained in 46.2 per cent of cases successfully collapsed for less than three years, whereas in patients successfully collapsed for more than three years the cure was maintained in 84.6 per cent.

In carrying out pneumothorax treatment, the author attempts to follow a definite routine. After the degree of collapse has been obtained that is required to obliterate all excavation and that is considered necessary for a satisfactory splinting of the whole lesion, and as soon as symptoms of activity have disappeared, a very slow and gradual re-expansion of the lung is allowed. If one is dealing with a case having infiltration and excavation in one upper third, and if an 80 per cent collapse must be made of this upper third before it is satisfactory, it may be found necessary to maintain this degree of collapse for a period of one year. At the end of the second year a gradual re-expansion may find a collapse of 50 per cent. It is during the latter part of the third year and during the fourth year, when re-expansion of the same upper third now finds only a collapse of 10 to 20 per cent before refill, that special care is necessary. It is while the treatment is at this stage that several factors have to be weighed.

Extent of Original Lesion: The extent and nature of the original lesion is probably the most important factor in making our decision as to when we should stop treatment. The smaller the original lesion, the more confidence one can feel regarding expansion. Where there has been a large area of excavation originally, one usually finds that a considerable period has been taken up on obtaining a complete collapse, and a further long period has followed before the sputum has remained negative for tubercle bacilli. A period of three years with negative sputum has now probably brought the treatment into the fifth year. Cases like this may have had so much original lung destruction that a phrenicectomy or one or more stages of thoracoplasty may be necessary to complete the obliteration of the pleural cavity. Cases in this group which have continued to have intermittent positive sputa ought to have their treatment continued indefinitely. Some of these cases may have been three years negative, but still show little, if any, signs of re-expansion. If these latter cases refuse the surgery necessary to close the pleural space, it might be a supererogation to continue refills except at very long intervals—that is, if the mediastinum is fixed. However, if the mediastinum is not fixed, a shorter refill interval should be necessary to keep it in position.

X-rays During Re-Expansion: The most important change to look for röentgenographically in lung re-expansion is a reappearance of excavation, for such an occurrence warrants an immediate reversal of treatment, with closure of the cavity. Thickening of the pleura often obscures a considerable amount of lung detail. Usually, a radiograph of a 90 per cent re-expanded lung in the fourth year of treatment reveals numerous small calcified deposits with several striations and bands where originally the lesion was located. Lesions which are shown by an x-ray serial to have undergone little resolution, to contain little or no calcium, and to have made little or no attempt at stellar formation or fibrosis, and yet have no perifocal exudate, undoubtedly contain tubercle bacilli. If these lesions

have not healed under pneumothorax, they will not do so after re-expansion, and they may go on to central caseation, followed by liquefaction and excavation, if collapse is not maintained.

Fluid as a Complication: When the development of a serous effusion occurs, a determined effort must be made immediately to prevent it from interfering with the desired degree of collapse. By performing frequent aspirations and providing the necessary air replacements, this untoward result may be averted.

The younger the patient, the more inclined is the author to prolong pneumothorax treatment. He has not yet resorted to re-expansion in the case of a patient in his teens, and feels that one rarely is justified in so doing. Between the ages of fifteen and thirty years relapses following re-expansion are more common than later.

Occupation—Economic Status: Pneumothorax patients whose occupations require considerable physical exertion should change to easier jobs. The unfortunate number who have to return to hard manual labor ought to have pneumothorax treatment continued considerably longer than other patients, and a larger proportion of this group than of any other should have pneumothorax continued indefinitely.

Poverty with its by-products of unsanitary surroundings, poor food and lack of fresh air is unfavorable to the rapid healing of tuberculous lesions. Patients struggling with difficult economic situations ought to have their pneumothorax continued longer than the average.

Prevention of Spread: The more contacts there are, the more careful one has to be about terminating the treatment. A mother in the lower class, with a large family of children, ought to have her pneumothorax continued longer than otherwise, because of the havoc that may be caused if relapse occurs.

Pregnancy: Where there has been a great deal of original lung destruction, pregnancy is not advised. Where the involvement has been somewhat less, and the economic and home conditions are satisfactory, pregnancy may be considered safe, provided pneumothorax is continued for at least one year after full term, provided pneumothorax has been satisfactory and sputum has been negative for three years. In cases where the original lesion was moderate in extent, the patient is advised to choose between having the baby during the fourth year of pneumothorax treatment, following a satisfactory collapse and negative sputum, and continuing the treatment for another year, or allowing re-expansion during the fourth year and then waiting for another three years before becoming pregnant.

A Final Period of Trial: When it has been decided that the time for stopping the treatment has arrived, the following procedure is adhered to: The partially re-expanded lung is allowed to re-expand further, so that before refill there is a collapse of only about 10 per cent at the deepest part of the pneumothorax. The collapse is maintained at this level for from four to six months. It may be found necessary during these months to shorten the intervals between and to give smaller amounts of air, in order to insure a collapse of not more than 20 per cent after refill. Thus, the site of the original lesion is in a largely re-expanded state all through the refill cycle. During this period the patient is instructed to give the lung a real trial by rehearsing any extra work, or exercise, that is contemplated for the following five years. The patient ought at least to be leading what is considered, for him, a normal life. If there has been no change röentgenographically following this period, and if the sputum has remained negative for tubercle bacilli, the refills are stopped and the pleura space is allowed to obliterate.

Final Sputum Test: Examination of tubercle bacilli by the direct smear method and even by the concentrated sputum examination have been found wanting as a means of determining whether or not the pneumothorax patient is bacillus free. The guinea pig inoculation test is far superior although it is an expensive procedure. The author feels that the community would be repaid many times by equipping the laboratory of each pneumothorax clinic with the facilities for this test.

When Should Refills be Stopped? by John Chichester Dundee, M.D., B.C.H. British Jour. of Tuber., Apr., 1936.

LIP-READING

If the deafened child is of average mental ability he can certainly learn to speak clearly and to lip-read well enough so that all who come in contact need not know of his deficiency, says Elizabeth Scott in "And the Deaf Shall Speak" in the August *Hygeia.*

If the child has completely lost his hearing before entering the first grade, he will be happier if he is placed in a special school for a few years. Most schools refuse to accept a baby under two years of age, but they do prefer to take a child at least a year before he would be eligible for the public schools.

FOUNDERS DEDICATION ADDRESS*

By R. H. WALKER, M. D., F. A. C. S.
Charleston, W. Va.

WE meet here today to honor the memory of the founders of the Medical Society of West Virginia, now the West Virginia State Medical Association. On this occasion it is appropriate to narrate some of the historical facts surrounding the organization of the Medical Society of West Virginia. Its high ideals and purposes are amply and vividly set forth in its constitution and by-laws, made and adopted at Fairmont in 1867. The purposes and ideals of the Association were: first, to confederate together and bring into a combined organization the entire legitimate, reputable and regular medical profession of West Virginia; second, to unite with similar associations, to form the American Medical Association; third, to promulgate medical knowledge and advance medical science; fourth, to elevate the standards of medical education; fifth, to secure the enactment and enforcement of laws relating to medical affairs; sixth, to promote friendly intercourse and relationship between members of the medical profession and to foster the material interests of its members by protecting them against unjust impositions; seventh, to enlighten and direct our public opinion to the great problems of State Medicine.

This organization dates back to the early days of our State. The physicians of West Virginia were formerly members of the Virginia Medical Society; and after the separation of West Virginia from Virginia, the physicians who were members of the Virginia organization found themselves without a medical society. Many of the leading physicians realized the great need for a State medical organization and discussed among themselves the desire to establish a State Medical Society. As a result of these deliberations, on February 28, 1867, a circular, in the form of a call, was addressed to all reputable and regular physicians of the State, to meet in a convention at Fairmont. In response to this call a number of eminent physicians and surgeons assembled in Fairmont on April 10, 1867; Dr. Henry Bates was made permanent chairman of the convention; Dr. James E. Reeves and Dr. J. W. Ramsey were elected secretaries of the medical convention mentioned in the above call. After the permanent organization of the convention was completed, Dr. John E. Hupp of Wheeling, offered the following motion: "That it be expedient to establish and organize a medical society in West Virginia." This motion was unanimously adopted and a committee of seven physicians was appointed by the President to formulate a constitution and by-laws to govern the Society. After several hours of work, deliberation and discussion on the part of the committee, it reported the result of its labors. The report was adopted as recommended by the committee and the Medical Society of West Virginia was organized; its constitution and by-laws were adopted at the Fairmont convention and the constitution and by-laws of the Medical Society of West Virginia are essentially the same as the constitution and by-laws of the West Virginia State Medical Association are now, and still forms the backbone and framework of the organic laws of our present Association. The same noble principles and high ideals of service, beauty and goodness characterize both of them.

A nominating committee was appointed by the chairman of the convention for the purpose of nominating persons to fill the official positions of the Medical Society of West Virginia; Dr. John Frissell was nominated and elected president; Dr. Jesse Flowers, Dr. U. N. Mackey, Dr. James M. Lazzelle were nominated and elected vice presidents; Dr. James E. Reeves was elected secretary and Dr. J. C. Hupp was chosen as treasurer. The society adopted appropriate resolutions thanking the City of Fairmont for its hospitality; the Methodist Episcopal church for the use of its building; and the Baltimore and Ohio Railway Company for transportation given free to the physicians and surgeons who had assembled in Fairmont to attend the convention. The Medical Society of West Virginia was fully organized and after completing its organization the convention adjourned to meet in Wheeling in the fall of 1867.

It was an eventful meeting. There many interesting things took place. A number of lectures were delivered upon interesting medical questions, such as diphtheria and the use of vapor of quicklime in its treatment, colloid cancer of the breast and the use of the microscope in the study of pathology; many eminent physicians were in attendance upon the Medical Society, including Dr. James E. Reeves,

*Presented at the dedication of the Founders Monument of the W. Va. State Medical Association at Rivesville, W. Va., on June 9, 1936.

Dr. James M. Lazzelle, Dr. John Frizzell, Dr. W. J. Bates, Dr. J. E. Campbell, and Dr. J. C. Hupp; the Mayor of the City of Wheeling appeared before the meeting on the 2nd day of October, 1867, and welcomed the society to the City of Wheeling. The Honorable Arthur I. Boreman, the first Governor of West Virginia, appeared and gave a brief address. On account of his weakened physical condition, he was unable to discuss the ideals, opportunities and purposes of the Medical Society. New members were elected and invitations were sent out to the physicians of the State to join the Medical Society. Dr. John Frissell delivered an able and eloquent address upon the conditions and problems of the State and progress all over the world as it appeared to the members of their profession at that time.

The Medical Society of West Virginia passed resolutions requesting the Legislature of West Virginia to make it compulsory to register births, deaths and marriages, and to make vaccinations compulsory for smallpox. This was the beginning of the long fight on the part of the medical profession of West Virginia for the establishment of the Bureau of Vital Statistics. The West Virginia State Legislature of 1921 passed an act adopting the principles advocated by the Wheeling convention relating to the registration of births, deaths and marriages. The Bureau of Vital Statistics was then a reality and no longer the dream of the medical profession, and West Virginia was included in the registered area of the Federal Government in 1925. Prior to this time statisticians of the Federal Bureau of Census had no data which they could use in making up the statistics of births and deaths and many other valuable subjects. If the Legislature had passed this law at an early date as requested by the Medical Society of West Virginia, it would have rendered invaluable aid to the citizens of our State in establishing claims of veterans of the Spanish-American War, the World War, and many other legal matters. In ideals, the Medical Society of West Virginia in the early days of our Mountain State, was born and became a living aggressive institution. It has made continuous progress along with the development of our State during the sixty-nine years that have passed hurriedly by since the formation of the Medical Society of West Virginia.

Too much praise and honor cannot be given the founders, the pioneers in the field of legitimate scientific medicine. In West Virginia, the pioneer physician and surgeon had many hardships and many obstacles to overcome in the practice of medicine. The country was sparsely settled; the roads were merely paths, mostly in creek beds, and there were no bridges; no hospitals and rarely consultants, and no nurses; they had many hard battles with the rain, mud and snow. Through all of these conditions the physician was proof against peril and was truly a ministering angel to all of the people who lived in the hills, on the mountain sides and in the valleys of West Virginia.

The Medical Society of West Virginia has endured almost three score and ten years—a longevity which is able argument of the worthwhile service it has rendered to the citizens of West Virginia.

The Medical Society of West Virginia has taken the leading and active part in the development of civic health organization and has been an active force in our State. There is much tangible evidence of accomplishment of the Medical Society of West Virginia, and as members we point with pride to the good health enjoyed by the citizens of our State; the establishment of the Health Department in 1913; followed by the organization of a number of full-time county and city health units which are rendering to the people invaluable help in the prevention of disease. As a result of these agencies the average life expectancy of our citizens has been increased from thirty-six years to sixty.

There are many splendid hospitals which compare very favorably with the hospitals of other states and which serve well the needs of our people. In almost every instance these have been proposed or established by some enterprising physician in the community. The improvement in the treatment and care of the indigent, tuberculous and mental defectives in our State institutions are the results to a large extent of the activities of the members of the West Virginia State Medical Association. Many members of the Association have distinguished themselves as leaders in their profession and have likewise achieved eminent success in civic affairs in West Virginia. Many other physicians and surgeons have distinguished themselves as members of the State Legislature, and as official members of city, county and district bodies of West Virginia, and as heads of State institutions. The intangible worth of our Association is difficult to grasp. Its general educational value to our entire membership is invaluable in developing the young physician by taking part in discussion and preparing papers for his county and state society. The enormous amount of charity work

given to the citizens of our State and its subdivisions cannot be accurately estimated.

The Medical Society of West Virginia did its great work and rendered its great services to humanity; its successor, the West Virginia State Medical Association has its duty to the people of this State; its work can never be finished or completed. With every new age there are new problems and it was in the laboratory of experimentation, started for the good of humanity, that medical science was born, nurtured and grew into manhood. The medical profession is now confronted by many new problems. These all perhaps are the immediate result of a changing age and the late war. The improved roads, the automobile and the airplane have changed the world's movement, thought and point of view. There are many who would seize upon only the means and ends of progress to achieve their aim. Under socialism, communism and fascism the State would practice medicine and surgery. Some people argue that the State can do this better than individuals; the fallacy of social medicine is apparent to all men and women everywhere who read and think intelligently. There would be no incentive for physicians and surgeons to qualify themselves for the very reason that they would receive nothing, no compensation other than a small salary. All the excellency of the profession would melt into nothing. Under this system there would never be a Kelly, a Halstead, a Bloodgood, a Mayo, or a Cushing. We desire entirely to condemn social medicine and to renew our allegiance to the great system of professional ethics of our Association.

In the public health agencies of West Virginia, the members of these units are subject to change the same as politicians and are removed from their positions under the same system that Andrew Jackson used in replacing Federal employees in Washington, known as the spoil system, "To the victors belong the spoils." There can be no more dangerous system of government anywhere than the spoils system. The heads of state institutions for the insane and of the Health Department of the State should be under civil service and not subject to removal by changing of administrations. A law should be passed which would give them the security they so much deserve; one similar to the civil service of the Federal Government. For the public welfare, this act of the legislature to secure civil service for public health units in the counties, cities and State, would be a great step towards efficiency for the health units and hospitals of West Virginia.

It has been my privilege to know Dr. C. O. Henry and Dr. T. M. Hood and have the opportunity to observe their long and valuable service in the practice of medicine in West Virginia. We are pleased to honor these elderly physicians along with the founders of the Medical Society of West Virginia of which they have been honored members so many years. Theirs has been a great opportunity for service to humanity and I cannot better honor them than to quote the eulogy of Robert Louis Stevenson for their work and interest in erecting this memorial:

"There are men and classes of men that stand above the common herd, the soldier, the sailor, the shepherd not infrequently, the artist rarely, rarelier still the clergyman, the physician, almost as a rule. He is the flower of our civilization and when that stage of man is done with, only to be marveled at in history he will be thought to have shared but little in the defects of the period and to have most notably exhibited the virtues of the race. Generosity he has, such as is possible only to those who practice an art and never to those who drive a trade: discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So it is that, he brings air and cheer into the sick room and often enough, though not so often as he desires, brings healing."

This memorial, fashioned from native stone, taken from the mighty peaks of the Alleghanies, is symbolical of the rugged courage, daring spirit and penetrating vision of the founders of the West Virginia State Medical Association. It is also symbolical of the permanence of the ideals for which they lived and for which they fought and died; the vigilance of its officials in protecting the rights of its members, the progress of its members in research, in study and in the practice of medicine and surgery.

OUR SINCERE APOLOGY

In the August issue of the JOURNAL there appeared an article on Bronchiectasis by Dr. G. Dan Morse and Dr. G. Clyde Shinn of Hopemont Sanitarium. This article was accompanied by a number of x-ray illustrations. We wish to extend our sincere apology to Dr. Morse and to Dr. Shinn for our error in transposing the legends under figures four and five, on page 356.

Figure IV should read:—"Postmortem injection of tuberculous lungs. Bronchiectasis seen in right lower lobe distant from tuberculous disease, and in left upper lobe associated with tuberculous disease."

Figure V should read:—"Bilateral lobe bronchiectasis present after apparent healing of tuberculosis with resulting negative sputum. (See text, Case 2)".

WEST VIRGINIA MEDICAL JOURNAL

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THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

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¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Member subscriptions	$2.00
Non-Member Subscriptions	3.50
Single copies	.50

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PRESIDENT'S PAGE

THE COMING ELECTION

The political pot, already simmering, will soon begin to boil. It is neither my desire nor my intention, as your Association President, to allow myself to become involved in the feverish excitement that invariably accompanies a presidential campaign. But I do feel that it is not improper at this time to call to your attention the importance of exercising sound judgment in the selection of those persons who are to make our State laws.

I have always felt that our Association should never make any organized effort to elect or defeat any candidate for public office. However, I think it is the duty of every physician as an individual to ascertain the respective merits of legislative candidates and to vote for those candidates who are recognized as being "level-headed". A legislative candidate need not be particularly sympathetic to the interests of organized medicine. If a candidate is "level-headed", if he is amenable to logic and common sense, he will make a good legislator for the State as well as for the medical profession.

So far as I know, the doctors of this State have never made an unreasonable request of the West Virginia Legislature. That probably accounts for our legislative successes of recent years. Following up this thought, we have nothing to fear from a legislature composed of reasonable men. Hence our job is not to fight for the election of a previously arranged slate, but to impress upon all candidates that our Association will expect reasonable cooperation in our continued efforts to advance medical science in this State.

If you have not already done so, we suggest that you give some thought to your legislative ticket now. Talk to your candidates. Sound them out on the problems confronting the medical profession today. Tell them of the European experiences with the socialization of medicine. Such contacts will accomplish a two-fold purpose. They will enable you to cast a more intelligent ballot on election day and they will pave the way for better cooperation and understanding if and when your favorites are elected.

I hereby appoint each Association member a committee of one to contact his legislative candidates well in advance of the November election.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

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AMERICAN MEDICAL DIRECTORY

The Fourteenth Edition of the American Medical Directory has been completed and copies are now available for general distribution.

The directory, with nearly twenty-five hundred pages, is a vast storehouse of information. It contains not only the most complete list available of the physicians of the United States and its dependencies and of Canada, but much additional data which hospitals, libraries and various other institutions, as well as individuals, will find useful and readily available. The directory is the only nation-wide register of physicians in which the extensive data on medical education, licensure and society affiliations have been verified.

The 1936 edition contains 183,312 names, or 4,796 more than were in the previous edition issued in 1934. The names of 13,157 physicians have been added and 7,684 names have been removed because of death. More than 70,000 changes of address have been made, in addition to thousands of changes in society affiliations, teaching positions, specialties and office hours.

In this edition, thirty-two states show an increase in the number of physicians; New York leads the list with 1,201, followed by California (369), Pennsylvania (281), New Jersey (262) and Massachusetts (249). A slight decrease in the number of physicians is shown in Missouri, Georgia, Kentucky, Tennessee, Oklahoma, Alabama, Indiana, South Dakota, Maine, Vermont, Mississippi and New Hampshire. When the thousands of changes of location are analyzed they seem to show a noticeable migration of physicians to the larger towns in the South Central states, a trend that was previously present also in some other sections of the country.

The first section of 221 pages in the new directory includes the constitution and by-laws of the American Medical Association, the Principles of Medical Ethics, and a list of meeting places of the annual sessions of the Association since the first one in 1847, with the names of the president installed during each meeting. In this section also are lists of the hospitals that are approved for intern training, the medical libraries, the medical journals published in the United States, Canada, the Philippine Islands and Puerto Rico, the names of medical officers of the various government services, the national organizations for the various specialties with the names of their members, the membership of the new examining boards for the specialties, the medical schools in the United States and Canada with a brief history of each, and the members of the National Board of Medical Examiners.

The second section is arranged by states. There is published under each state the medical practice act, the members of the board of medical examiners, members of the state board of health, county and city health officers, and officers of the state, district and county medical societies. Following this is a list of 7,220 hospitals, sanatoriums and related institutions arranged by towns, with the name, location, bed capacity, superintendent, and type of patients treated in each institution. Then, arranged by towns, comes the great list of physicians, giving the year of birth, school, year of graduation and license to practice, membership in the state society and special societies, professorships, and Fellowship in the American Medical Association. The home and office addresses and office hours also are given for physicians in towns of more than 10,000 population.

A new feature in this edition is a key letter showing that a physician has been certified as

a specialist by an approved examining board. Several of these boards have been approved by the Council on Medical Education and Hospitals since the directory went to press. The next edition therefore will contain a more complete list of certified specialists. An especially interesting feature of the 1936 edition is the list of American physicians temporarily located in foreign countries.

The third section, of 525 pages, is an alphabetical index of the names of 183,312 physicians; and practically every name is followed by the name of the city and state, thus indicating where in the directory detailed information about the individual physician may be found.

The bringing to completion of the Fourteenth Edition of the American Medical Directory has been a monumental task, in the pursuance of which thousands of individuals, societies, licensing boards, medical colleges and other organizations have coöperated. For their ready coöperation and assistance the American Medical Association is thankful and deeply appreciative.—*Journal, A. M. A., July 18, 1936.*

INDUSTRIAL HYGIENE SURVEY

At the request of the West Virginia Compensation Department and through the cooperation of the United States Public Health Bureau, the State Health Department recently established a division of industrial hygiene which will shortly begin a silicosis survey of the State in order to reduce silicosis hazards and to determine the silicosis compensation rate for West Virginia. The new division and its work will be under the direction of Dr. A. E. McClue, State Health Commissioner.

On June 30, 1936, Dr. McClue met with the Association's Advisory Compensation Committee to work out the policy of the new division so that there would be no encroachment upon the private practice of medicine. In explaining the proposed silicosis survey, Dr. McClue stated that a portable x-ray would be used to make x-ray plates of suspected cases of silicosis, but he informed the committee that these plates would be the property of the compensation department and would be used for no other purpose than to determine the extent of silicosis and silicosis hazards in the State.

It was agreed by Dr. McClue and the committee that all industrial employees with suspected cases of silicosis would be at once advised to see their family physician. It was further agreed that no attempt would be made to treat or suggest treatment to such employees. The x-ray findings of the industrial hygiene division will not be available to the family physician of a suspected case. If the above agreement is adhered to, the committee feels that there will be no encroachment upon the private practice of medicine and that, on the other hand, the survey may result in the early treatment of silicosis victims by physicians in private practice.

There has recently been some misunderstanding relative to the purpose and proposed activities of the new division of industrial hygiene. For that reason the JOURNAL takes this opportunity to explain the work of the division and to point out that the details of the proposed silicosis survey were mapped out jointly by Dr. McClue and the Association's Advisory Compensation Committee. We hope the silicosis survey will be successful and accomplish much good. But whether successful or not, we feel the rights of the physicians in private practice will not be infringed upon.

INSURANCE MEDICAL DIRECTORIES

For the past several years this JOURNAL has pointed a finger of scorn at the various "insurance directories" published by commercial interests. An assessment of fifteen dollars is charged each doctor whose name is published. These so-called "directories" each contain about 5,000 names, hence the total income to the promoters is in the neighborhood of $60,000 per issue. A liberal estimate of the cost of publishing an issue is $10,000. Therefore we can roughly estimate that the

doctors of America contribute $50,000 per year for each directory that is published.

The Directory of the American Medical Association, which contains the name of every doctor in the United States and a storehouse of other valuable information, is published without any assessment whatever.

Various efforts have been made in recent years by county and state societies to protect their members from this directory racket. Last fall the Marion County Medical Society adopted a resolution forbidding any of its members to allow the publication of their names in any commercial directory. A few months later the Arkansas Medical Society adopted a resolution condemning the directories for indirect solicitation of patients and also forbidding their members to allow their names to appear in commercial insurance directories.

The Arkansas resolution was later presented to the House of Delegates of the American Medical Association and adopted by that body on May 14, 1936. Hence the mandate of the American Medical Association now forbids all members to allow their names to be listed. The resolution follows:

"WHEREAS, Certain commercial interests are publishing medical directories, listing physicians by specialty and otherwise, as available for insurance and compensation work, and other professional services, and

"WHEREAS, Participation by listing in these lay publications merely serves for the profit of the promoters, and is furthermore technically indirect solicitation of patients,

"*Therefore, Be It Resolved,* That the American Medical Association condemns these practices as unethical and forbids its members to continue listing their names in such directories."

The Arkansas Medical Journal comments, "As is often the case, individual physicians felt that they might incur a loss if they removed their names from such directories while other members retained their listing. With this thought in mind, the above resolution was adopted. The practice of so listing is declared unethical; no individual member may now feel that should he remove his name that another physician will accept that listing. The benefit is direct to these physicians in the fees saved; the loss is entirely the promoters."

And that's that!

OBITUARIES

DR. JOHN E. DAUGHERTY

Dr. John Edwin Daugherty, 38 years of age, died suddenly at his home in Elkins on the evening of July 16, 1936. Death was attributed to a heart attack.

Dr. Daugherty was born in Elkins on November 4, 1897. After graduating from the Elkins high school, he served as a first lieutenant at Columbia University during the World War. Later he attended Davis and Elkins College and West Virginia University. In 1924 he received his medical degree from the Medical College of Virginia at Richmond. Following his interneship he remained in Richmond until 1928, when he returned to Elkins and entered the private practice of medicine.

In the fall of 1927 Dr. Daugherty was injured by a truck in Richmond and is said to have received injuries from which he never fully recovered.

The deceased was associated with the City Hospital in Elkins. He was a member of the St. Brendan's Catholic church and the Knights of Columbus. Dr. Daugherty was a member of the Barbour-Randolph-Tucker Medical Society and the West Virginia State Medical Association.

Surviving relatives include his father, one brother and one sister, the wife of Dr. Frederick Kramer of Philadelphia.

DR. CHARLES W. REXROAD

Dr. Charles W. Rexroad, 79 years of age, died at his home in Harrisville on August 4, 1936. He was one of the best known physicians of Ritchie county where he had practiced for approximately 50 years. Dr. Rexroad was an honorary member of the Academy of Medicine of Parkersburg and of the West Virginia State Medical Association. He was a past president of the old Ritchie County Medical Society.

Dr. Rexroad was graduated from the Starling Medical College at Columbus, Ohio, in 1886 and was licensed to practice medicine in West Virginia the same year. He located in Ritchie county and practiced there until his retirement several months

ago. He served for a number of years as examining surgeon for the Bureau of Pensions.

Funeral services were held on the afternoon of August 7 and interment was made in the family plot near the Rexroad homestead.

DR. ALFRED R. WARDEN

Dr. Alfred R. Warden, widely known Taylor county physician and a former member of the State Public Health Council, died at his home in Grafton on August 20, 1936, at the age of 78 years. He had been in ill health for several months.

Dr. Warden was born in Marshall county in 1858 and received his preliminary education there. He later attended West Virginia University and Ohio Wesleyan University. In 1886 he was graduated from the school of medicine of Western Reserve University and was licensed to practice medicine in West Virginia the same year. He located at Malden in Kanawha county, later moving to the State of Washington and then returning to Taylor county.

Dr. Warden was an active worker for organized medicine and served his county medical society in many capacities. In spite of his age, Dr. Warden was serving his society as treasurer at the time of his death. For a number of years he was the county health officer for Taylor county. He also served for a time as the Baltimore and Ohio railroad physician.

DR. JOSEPH H. SMITH

Dr. Joseph H. Smith, 33 years of age, of Athens, W. Va., died at the Bluefield Sanitarium on August 20, 1936, following an illness of several months. He had practiced in the Pocahontas coal fields for several years before his death.

Dr. Smith received his academic degree from Concord Normal School and was later graduated from the Medical College of Virginia at Richmond. Following his interneship at the Bluefield Sanitarium, he entered the practice of medicine in Mercer county. Surviving are his parents, two sisters and three brothers.

RICHARD B. EASLEY

Dr. Richard B. Easley of Huntington, W. Va., died at 7:30 p. m. August 13, at Bellahaven, Virginia. Dr. Easley was convalescing from a repair of a hernia done about two weeks previous to his death. Death was apparently caused by a heart attack.

Dr. Easley located in Huntington in May, 1935 and since that time has been engaged in the practice of medicine as a specialist in neurology and psychiatry. He was born in 1895 and received his education at the Medical College of Virginia in Richmond, Virginia, graduating in 1926. Dr. Easley was a member of the Cabell County Medical Society.

Funeral services for the deceased were held at Bellahaven, the Easley's summer residence, on Saturday afternoon, August 15.

DR. A. P. BUTT

Dr. Arthur Parker Butt, Sr., of Elkins, one of the most widely known physicians in the State, died there on the evening of August 5, 1936. He had been in ill health for several months and his death was not unexpected. He was 65 years of age.

Dr. Butt was born in Woodstock, Virginia, on January 16, 1871, and was graduated from the College of Physicians and Surgeons, Baltimore, in 1895. He first practiced at Romney and then moved to Davis where he operated the Allegheny Heights Hospital until 1919. He then moved to Elkins where he established the Elkins City Hospital which he operated until his death.

After serving for several years as secretary of the West Virginia State Medical Association, Dr. Butt was elevated to the presidency in 1916 and served with distinction. He was also a past secretary and past president of the Barbour-Randolph-Tucker Medical Society, and a Fellow of the American College of Surgeons.

Dr. Butt was widely traveled, both in this country and abroad. He spent much of his time visiting American and European clinics for postgraduate study. He kept abreast of the times in the development of medical economics, as well as the science of medicine. Few doctors have ever equaled his record of attendance at county, state and national medical meetings. Dr. Butt was intensely practical, he was recognized as an excellent business executive and as a surgeon of unusual ability.

Dr. Butt was first married to Miss Mae Sutor of Baltimore and to this union three children were born: Dr. A. Parker Butt, Jr., Dr. Kenneth Butt, both associated with their father, and Mrs. Richard Talbott of Martinsburg. After Mrs. Butt's death, he married Miss Flora Knutti, who, with an infant daughter, survives. Three sisters and two grandchildren also survive. Funeral services were conducted at Elkins on the afternoon of August 6, and interment was made in the Maplewood cemetery.

COUNTY SOCIETY NEWS

CENTRAL WEST VIRGINIA

The Central West Virginia Medical Society met at the Oakland Hotel, Webster Springs, on Saturday evening, July 25, with 35 members and guests in attendance. A fine banquet was served at six o'clock, after which the business of the society was taken up. Dr. Henrietta Marquis of Richwood was elected to membership, the first lady physician to become a member of the society.

The essayists of the evening were Dr. Russell Kessel, Charleston, who presented an interesting and able paper on "Conservative Management of Pelvic Inflammatory Diseases", and Dr. Andrew E. Amick, Charleston, who gave a very fine and instructive talk on "Practical Factors in the Management of the Acute Diarrheas in Infants and Children."

The next meeting of the Society will be held in Buckhannon in October, 1936.

J. B. DODRILL, *Acting Secretary.*

CABELL COUNTY

The annual social outing of the Cabell County Medical Society was held at the Guyan Country Club, Huntington, on the afternoon and evening of August 20, 1936. There was an excellent attendance. The affair started off with a golf tournament during the afternoon. Prizes were awarded for low gross score and low net score, and booby prizes were also presented. Dinner was served at seven o'clock, after which a social evening was enjoyed by the members.

CHAUNCEY B. WRIGHT, *Secretary.*

OHIO COUNTY

Members of the Ohio County Medical Society were special guests at the dedication ceremony and presentation of a bust of Dr. Jacob Schwinn by the Jacob Schwinn Study Club of Wheeling which was held in the Solarium of the Ohio Valley General Hospital on the afternoon of August 19. Mr. Thomas B. Foulk, Wheeling attorney, was the speaker on the above occasion.

Ohio county doctors were also guests at "Hullihen Day" sponsored by the Wheeling District Dental Society at the Hotel Windsor on the morning of August 18. The speaker was Dr. G. B. Winter, D. D. S., of St. Louis, Missouri.

W. M. SHEPPE, *Secretary.*

MONONGALIA COUNTY

The regular monthly meeting of the Monongalia County Medical Society was held at the Morgantown Country Club on the evening of August 4, 1936, dinner being served at six o'clock. The scientific essay of the evening was presented by Dr. William B. Scherr of Morgantown on "Gynecology." There was a good attendance and a liberal discussion of this excellent paper.

G. R. MAXWELL, *Secretary.*

GENERAL NEWS

VITAL STATISTICS

Because failures to report births and deaths are becoming more and more noticeable as infant deaths are checked and no birth certificates found for them, the division of Vital Statistics of the State Health Deparment has added two field agents to its staff whose duties will be to investigate and to try to correct this situation, announced Dr. Franklin H. Reeder, director of the division.

The proper registration of births and deaths is very important to a State and Nation as well as to its people, said Dr. Reeder. A few of the aids of birth registration to the individual include proving parentage, identity and legal dependency; proving date of birth for automobile license, right to vote and to marry; proving place of birth for passports and establishment of citizenship. To the State or Nation the providing of birth statistics to ascertain the number of births and to compute the population is one of the important values.

Death registration proves the fact of death for life insurance claims and for settlement of estates, and many other benefits to the people. Its more important function, though, is to provide official statistics concerning the causes of death so that research and preventive measures may be carried on to prevent disease.

The agents, L. A. Casto and John C. Condry, will visit every county in the State and check with district registrars, physicians and undertakers on birth and death records. They will lend whatever assistance they can in making more complete and accurate registrations. Mr. Casto and Mr. Condry will carry a supply of birth certificates occurring in the present year and delayed birth certificates with them and whenever possible will fill them out. In case of an older person who is not sure whether or not he is registered, the agent will take his name

and the office in Charleston will look it up as soon as possible and notify him.

It is hoped, said Dr. Reeder, that the physicians will coöperate with the agents in their attempt to bring about a more accurate registration of vital statistics.

POST GRADUATE ASSEMBLY

The twenty-first International Assembly of the Interstate Postgraduate Medical Association of North America, under the presidency of Dr. David Riesman of Philadelphia, Pennsylvania, will be held in the public auditorium of St. Paul, Minnesota, October 12, 13, 14, 15 and 16 with pre-assembly clinics on Saturday, October 10 and post-assembly clinics on Saturday, October 10 and post-assembly clinics Saturday, October 17 in the hospitals of St. Paul.

The aim of the program committee with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner, as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

In coöperation with the Minnesota State Medical Association, the Ramsey County Medical Society will be host to the Assembly and has arranged an excellent list of committees who will function throughout the Assembly.

A most hearty invitation is extended to all members of the profession who are in good standing in their State or provincial societies to be present and enjoy the hospitality of the medical profession of St. Paul. A registration fee of $5.00 will admit each member of the medical profession in good standing to all the scientific and clinical sessions.

A list of the distinguished teachers and clinicians who will take part on the program may be found on page 16.

Special railroad rates will be in effect.

For further information write Dr. W. B. Peck, Managing-Director, Freeport, Illinois.

MARYLAND ALUMNI MEETING

A temporary organization of the Kanawha Valley Alumni of the University of Maryland Medical School and the College of Physicians and Surgeons was perfected at a meeting held in Charleston on July 2, 1936. Dr. A. A. Shawkey was elected as temporary chairman and Dr. R. R. Louft as temporary secretary.

The purpose of the temporary organization is to arrange for a banquet meeting of the alumni of the two schools at the Daniel Boone Hotel, Charleston, on the evening of September 8. A permanent organization will be established at this banquet meeting and an annual meeting and banquet will be arranged each year, probably in connection with the annual meeting of the West Virginia State Medical Association.

At the banquet held on September 8, representatives of the school will be present, who will be the guest speakers at the meeting of the Kanawha Medical Society immediately following the banquet. The banquet will start promptly at six o'clock.

All alumni of the combined schools residing in the territory of the Kanawha Medical Society and in adjoining counties are invited to attend and are at liberty to bring any other alumnus whom they may care to invite.

ILLEGAL CORPORATE PRACTICE

In a well-reasoned opinion, handed down on February 14, 1936, in *People v. United Medical Service, Inc.*, 200 N. E. 157, the Supreme Court of Illinois in unmistakable language prescribed corporations from practicing medicine, even though they attempt to do so through the medium of salaried employees who are licensed physicians. While the holding is by no means novel, nor the case one of first impression even in the jurisdiction in which it was decided, the decision is extremely important and is indicative of the unfaltering trend of American courts during the past quarter of a century, in the absence of a statute permitting such practice, to declare illegal the corporate practice of medicine, dentistry and optometry.

The decision is particularly gratifying to the profession in Chicago because of the prevalent, widespread abuses perpetrated in that city in connection with the practice of medicine by corporations, operating on a large scale, occupying whole floors of loop office buildings, employing forty, fifty or more physicians, from three to six dentists and even optometrists, and advertising on such a scale as to use entire pages in the metropolitan newspapers. The most flagrant and largest offender was the United Medical Service, Inc., the defendant in the present

case, a corporation for profit, incorporated under the laws of Illinois, the majority of whose stock was owned by one Joseph Berkowitz, a licensed physician. Early in 1934, the attorney general of Illinois, the Hon. Otto Kerner, filed in the Superior Court of Cook County an information in the nature of *quo warranto* to require the United Medical Service, Inc., to show by what authority it was practicing medicine. Eventually, the cause was heard by Judge M. L. McKinley, in March, 1935, on a stipulation of facts. Judge McKinley entered judgment ousting the corporation from the franchise, occupation and business of engaging in the diagnosis and treatment of human ailments. An appeal was taken to the Supreme Court of Illinois, and the judgment of ouster was suspended during the pendency of the appeal, the corporation in the meantime continuing its medical activities.

The Supreme Court's opinion is quite lengthy, because of the many legal technicalities involved in the issues as they were presented to that court; little of the opinion direcly relates to the legal right of a corporation to engage in the practice of medicine through the agency of employees who are licensed physicians. The Supreme Court pointed out that the Illinois medical practice act clearly evidences a legislative intent that only individuals may be licensed under it. A corporation, said the court, cannot possibly meet the requirements of the act essential to the issuance of a license, such as presenting proof of educational and moral qualifications. The corporation contended, however, that the ownership of a "clinic"; with offices where disease is diagnosed and treated solely by licensed physicians employed by the corporation, which received the fee charged patients, does not constitute the practice of medicine by the corporation. In support of this contention, the corporation cited *State v. Brown* 37 Wash. 97, in which the Supreme Court of Washington held invalid a provision of the Washington dental practice act which required a license to practice dentistry in order to "own, . . . run or manage" a dental office, and two Nebraska cases, *State Electro-Medical Institute v. Platner*, 74 Neb. 40. The cases cited, the court answered, are contrary not only to the views of this court previously expressed but also to the great weight of authority. The practice of a profession is subject to license and regulation and is not subject to commercialization or exploitation. To practice a profession requires something more than the financial ability to hire competent persons to do the actual work. It can be done only by a duly qualified human being, and to qualify something more than mere knowledge or skill is essential. No corporation can possibly qualify.

The court held to be without merit the contention of the corporation that so far as the Illinois medical practice act prohibits a corporation from practicing medicine by employing licensed physicians, the act is an unreasonable exercise of the police power and transcends the due process of law clauses of the State and Federal constitutions. The police power of the State, said the court, includes the power to enact comprehensive, detailed and rigid regulations for the practice of medicine, and no constitutional guaranty is violated if a State restricts the practice of medicine to individuals. To support its contention the corporation relied on *Liggett Co. v. Baldridge*, 278 U. S. 105, in which the United States Supreme Court held invalid a Pennsylvania statute which provided that every pharmacy or drug store should be owned only by a licensed pharmacist and that no corporation should own one unless all the members of the corporation were licensed pharmacists. However, answered the Supreme Court of Illinois, in the Liggett case the corporation was conducting an ordinary business; namely, the business of running a drug store, and neither engaged in nor assumed to practice a profession. It does not follow that because a person may have a constitutional right to operate a drug store, he has a like absolute right to engage in the practice of professions. Neither a natural person nor a corporation, an intangible entity, can complain if unable to fulfill the requirements reasonably prerequisite to obtaining a license to engage in a particular profession. There is nothing in the Liggett case which conflicts with the well established rule that a State may deny to corporations the right to practice professions and insist on the personal obligations of individual practitioners. Concluding that the judgment of the Superior Court was right, the Supreme Court affirmed that judgment of ouster.—*A. M. A. Bulletin, April, 1936.*

CONGRESS OF ANESTHETISTS

The fifteenth annual Congress of Anesthetists will be held in Philadelphia on October 19 to 23, 1936, with headquarters and exhibits at the Hotel Adelphia. The Congress is composed of the Associated Anesthetists of the United States and Canada, the International Anesthesia Research Society, the

Eastern Society of Anesthetists, the Mid-Western Association of Anesthetists and the Southern Association of Anesthetists.

Dr. Eldon B. Tucker of Morgantown, president of the Southern Association, will preside at the session to be held on the morning of October 22 and will deliver his presidential address on Friday morning, October 23. His subject will be: "Observations on the Use of the Newer Anesthetics, Vinethene and Cyclopropane."

Dr. George A. Emerson, Ph.D., head of the Department of Pharmacology, West Virginia University School of Medicine, and his assistant, Stanley J. Klyza, together with Benedict Abreau of the University of California School of Medicine, will present a joint paper on the afternoon of October 20 on the subject, "Ketonemia and Glycemia after Ether and Divinyl Oxid Anesthesia."

FEVER THERAPY CONFERENCE

The First International Conference on Fever Therapy is to be held at Columbia University, New York City, from September 29th to October 3rd, 1936. The subjects to be discussed will include physiologic and pathologic changes as well as the treatment of gonorrhea, both in the male and in the female; gonorrheal and non-specific arthritis; syphilis in its various stages; neurologic conditions such as multiple sclerosis, chorea, paresis, tabes; skin diseases, etc.

This meeting will be held under the chairmanship of Baron Henri de Rothschild of Paris, France. The French Committee, of which Professor d' Arsonval is honorary president, is under the chairmanship of Professor Abrami. Other members of this committee include Professors Alajouanine, Binet, Claude, Janet, Lardennois, Laubry, and Levaditi, and the general secretaries of the committee, Drs. Halphen and Auclair.

The American committee consists of Drs. Desjardins, Bierman, Hartman, Hinsie, Neymann, Simpson and Warren.

Abstracts of the papers to be read are to be published in the volume of the transactions in English, German and French.

Information regarding this Conference may be secured from the General Secretary, Dr. William Bierman, 471 Park Avenue, New York City, N. Y.

MEDICAL VACANCIES

Positions as medical officer, associate medical officer and assistant medical officer, at salaries ranging from $3,800 to $2,600 per year, are to be filled in the near future by the United States Civil Service Commission. Applications must be on file with the Commission at Washington, D. C., not later than September 8, 1936. Open competitive examinations will be held at a later date.

To become eligible, applicants must qualify in at least one of the following optional branches, and must state in their application the branch or branches desired—cardiology, cancer diagnosis and treatment, eye, ear, nose and throat, genitourinary, internal medicine, neuropsychiatry, pathology and bacteriology, röentgenology, surgery, tuberculosis, venereal disease, industrial medicine, and general practice.

STATE HEALTH CONFERENCE

The annual state health conference will be held in Wheeling, October 12, 13 and 14, with headquarters in the Windsor Hotel, it was announced by Dr. Arthur E. McClue, state health commissioner. This is a joint meeting of the state health officers conference and the West Virginia Public Health Association. It is expected that some 250 health workers and others interested in public health will attend.

Plans are rapidly being formulated by the committee on program and arrangements which consists of Miss Dorothea Campbell, chairman; Dr. Thomas H. Blake and Dr. John Thames. Many local and national speakers will lead the discussions on trends in public health work.

WOMAN'S AUXILIARY

McDOWELL COUNTY

The Auxiliary to the McDowell County Medical Society met on July 1, at the Appalachian Power Club Room in Welch, W. Va. Mrs. J. Howard Anderson was the presiding officer. Mrs. Anderson reported to the meeting the various activities of the Woman's Auxiliary to the State Medical Association at its Fairmont meeting.

The Auxiliary made plans for entertaining the medical society at a later date in the summer.

Following a business session the Auxiliary adjourned its meeting until September 9, when activities will again be resumed.

MAUDE H. EVANS, *Corresponding Secretary.*

FROM OTHER JOURNALS

PRE-PAYMENT PLANS

Much has been written and much has been said concerning the notorious pre-payment methods and medical service plans in operation in the Northwest.

Those who feel drastic changes in medical service must be brought about, have pointed to that part of the country as the spot where medical organization has taken the lead and shown the progressive spirit.

After reading a recent communication to the *Oregon Medical Reporter* by Dr. Alexander H. Peacock, Seattle, former president of the Washington State Medical Association and former chairman of that society's medical economics committee, one wonders if the picture in the Great Northwest is exactly as it has been painted in graphic press dispatches and glowing statements by some commentators on medico-social questions.

Said Dr. Peacock:

"When president of the Washington State Association and chairman of the Economics Committee, I went out of my way to make a study of this subject of taking care of the sick by mass methods. We have, of course, the various European systems to study and to observe. These I will not comment on as you are familiar with their good points and their weak ones.

"Our own county medical service bureaus, however, are another thing altogether. Here we can observe their workings out under our eyes and see the general trend. In the first place, they are taking care of the sick at a fee much below the actual cost. Good medical service cannot be given at any such figure. It means that the costs are coming out of the doctors' income. In the second place, they are educating the public to a very low medical insurance fee. The laity believe that good medical service can be obtainable at such a figure, if many of the well-known doctors and surgeons enter into such an agreement with them. This is establishing a low basis for a general insurance plan.

"In the third place, this plan initiated by organized medicine, instead of being limited to the industrial hazards, is rapidly spreading until it is covering a large number of the incomes of the county. It was, originally, intended to keep out of the field commercial hospital associations and some of the doctors who are considered to be on the outside of ethical medicine. Instead of driving them out they have increased the number of their contracts and the bureau itself has been obliged to get its clients from an entirely different field, that is, clerks and the white-collared class. While decrying state or federal medicine, they have laid a beautiful plan for the general medical care of the whole community. Of course, this is driving out private practice and everybody who possibly can is coming under the bureau service. The ultimate end of such a policy is quite apparent to everyone.

"My observations are that the service bureau is carried on under the idea that it is necessary, that a great many of the men are heartily out of sympathy with it and are afraid of its ultimate results, that if they could possibly do so they would withdraw from the bureau but are afraid on account of political reasons. The present plan in most of the bureaus is the modified panel system with the doctors carrying the entire load of hospitalization as well as medical service. The question of the bureau is analogous to the great problem before the country of those who believe in social security and those who believe in the competitive profit system. There can be no compromise of the two, it must be either one or the other. Personally, I am for the old method of competition, based on personality and good medical service.—*Ohio State Medical Journal.*

THE DRUG HABIT

The twenty-second annual report of the Municipal Court of Philadelphia was recently released. The section of the report on drug addiction was prepared by Dr. Robert A. Schless, who resigned as chief of the Bureau of Charities and Correction when the office was abolished as of January 1, 1936. Dr. Schless stresses that narcotic addiction is always curable but that many addicts return voluntarily to the habit after supposedly being cured because their associates are also drug addicts. He blames the Harrison act for much in regards to drug addiction for the following reasons:

1. The Federal Harrison act, barring general sale of drugs, "has done more to incite crimes of violence by drug addicts than any other action," because it made dope a bootlegged and consequently an expensive article.

2. Opiates may be relatively harmless to an individual and community if they are not used to excess.

3. Drug addiction has never been responsible for a crime of passion in Philadelphia in 16 years.

4. Even heavy use of narcotics over many years produces no permanent harmful physical effects.

Dr. Schless states that the courts of Philadelphia led the way some time ago in an "individualized" system of treatment for addicts which has been adopted by the Federal Government.

This system — whereby addicts are imprisoned until they are completely cured—has cut the admittance rate of addicts to the House of Correction, Philadelphia, from 737 in 1920 to 11 in 1935.

Dr. Schless further states that a fair appraisal of narcotic addiction cannot be published until we cast aside the tradition of looking upon the use of opiates as differing essentially from habituation to tobacco, and as to evil effects, directly in crime or in damage to body and morale of the user, narcotics are far milder than the steady use of strong liquors. Certainly whisky, with its record of incitation to violence and lust and its permanent fibrosis of vital body organs, has incomparably more evil to answer for.

Even as alcohol may, in moderation, be used with negligible damage to the person and none to the community, so opiates may be relatively harmless. The House of Correction has received many middle-aged or old Chinese who had smoked an occasional pipe of an evening, warmed over the yen shi for the next day, and gone about their business with no interruption, but who had the misfortune to be delivered to the law.—*Pennsylvania Medical Journal.*

FARMERS AND RURAL PRACTICE

A recent editorial published in at least two newspapers have commented upon the rural practice of medicine as affected by improved roads and the advent of the automobile. Dr. P. St. L. Moncure, President of the Medical Society of Virginia, taking issue with the points of view expressed in these publications, writes:

"In the *Loudoun Times-Mirror* and *The Southern Planter* of April, under the caption: 'Cheap Temporary Roads,' the following paragraphs refer to the country doctor: First, 'The country doctor, who once lived and practiced in the rural community, has long since fallen in with the trend of the times and moved to town.' And second, 'For medical care the farmer must either take the patient to town for an examination, or pay the almost prohibitive fee of a physician's call in the country.' These statements to us seem unwarranted, and unjust.

"The automobile brought the hard surfaced road. The farmer, as well as the country physician, bought his automobile; but the hard surfaced road and automobile ran the poor country physician into town, or out of his business or profession. And how? The farmer who had depended on his neighbor, his old family doctor, instead of sending for him as of yore, picked up the patient, especially if it was only an office case, and ran him into town to see some new doctor. It was not long before the family physician found that he would have to go to town, or else go out of business; for the farmer, and all of any trade or occupation who could afford to go to town, had left him. He was left with only the desperately poor—who could not afford a car, or afford to go to town—and these were not able to pay him anything.

"In answer to the second paragraph: Reports and statistics show that neither country nor town doctors are paid any more proportionately for amount of work done than they were in the old days of dirt roads, and slow travel by horse. And as for taking the patient to town for an examination, the farmer started it, not the doctor.

"We deplore the lack of facilities and equipment of the country doctor; and organized medicine is making every effort to acquaint him with the most approved and up-to-date appliances, and methods of diagnosis and treatment. Demonstrators and lecturers for several years have visited every section of the State bringing these new and improved methods to the country physicians—who haven't the time, nor money, to visit the large clinics and centers of teaching as often as they would like to do.

"If the farmers, and others in the country, would stick to their old tried and true family doctor, instead of running to town after new ones when the roads are good, they would not have as much cause for complaint when a hard winter comes, such as the one just experienced—where the elements of rain and snow, and zero weather—over which man has no control—tear up and damage all roads."—*Virginia Medical Monthly.*

THE EUGENISTS

Folk-lore for generations has persisted that "God sends little children where He wills," even if the blessed domicile is minus a cabbage patch or a doctor's black bag. Science lately admits that there may be something in the saga. Even the advisory council of that bureau of infinite power on earth, the Milbank Memorial Fund, heard recently that

neither all the statisticians that their millions may hire, nor all the propagandists these same millions put to work, *cannot* make the higher classes of society reproduce with any higher degree of fertility nor facility of purpose. If this is the case, say the Milbank devotees, then what is the use of it all?

Ethical medicine has been wondering about this same idea for quite some time. With those socialistic lay practitioners of medicine who have shouted from the housetops that the poorer specimens of the race could be taught to keep from reproducing or be so treated surgically, willy-nilly so that they could not, ethical medicine has not argued. The postulate held the germ of truth. Now that the propagandists have won their point that race-control methods should be broadcast far and wide so that the inferior social group shall not multiply, to their expressed despair these same propagandists do *not* find that the superior classes are making any effort to take up the white man's breeding burden where their so-called inferior brothers and sisters left off. So what to do about it? Like the prohibition experiment the eugenists would seem to be up against more than they bargained for. After all, God made human nature and not any salaried bureaucrat. A pun is the lowest form of wit by tradition and taste, and a byplay upon any man's cognomen is worse. Yet perhaps the editor will be forgiven for remarking that a *pearl* of a speech was made recently by Raymond Pearl, Ph.D., Sc.D., professor of biology in the School of Hygiene and Public Health of the Johns Hopkins University. When Dr. Pearl spoke before the advisory council of the Milbank Memorial Fund he said in part: "Human beings can be made to breed less rapidly than they have in the past, but apparently they can neither be wheedled nor forced into breeding more rapidly or extensively than they want to. Any population policy that assumes the contrary, in however hidden form the assumption is made, seems likely to be confronted by the inexorable, obstinacy of men and women in this particular department of physiology.

"The whole experience of the eugenics movement from its beginning seems to demonstrate rather conclusively that fertility differentials, whether between social and economic classes, or relative to true biological defects, can practically be altered by purposefully planned policies only in one direction. High expressed fertilities of classes can be reduced in a number of different ways. But no effective

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practical means, in our type of social structure with its existing attitudes, have been found to increase the realized fertility of groups where it is thought desirable to do so."

Perhaps Nature and the powers that be have decided that the politico-bureaucrats and illy-advised-foundations are not going to do anything successfully after all except to "stay in their own backyards!"—*Illinois Medical Journal.*

COUNCIL ON PHARMACY

In the Journal of the American Medical Association for April 25, 1936, the reports of Sandweiss, of Martin, and of the Council on Pharmacy and Chemistry would seem to bring to a close another of the recurrent dramatic episodes of mass psychology in the history of the so-called treatment of peptic ulcer.

Such group reactions occur in the medical profession as well as in other groups of individuals. They are, perhaps, a sequence of unsatisfactory results, which, in turn, are probably due to a lack of knowledge concerning the underlying causes of the disease or of the condition.

Consistent and continued unfavorable results, in time, cause discouragement and the reactions of "grasping at straws"; "hoping against hope"; "wishful thinking." When reason fails, emotion gains the ascendancy and the latter is augmented by such potent agencies as: The written word (printer's ink in all of its modifications); the spoken word (reinforced by the omnipresent radio); and "pictures" (still and in motion).

A perusal of the "literature" promoting the sale of these various "new" methods of treatment (17 are listed) should automatically produce a healthy skepticism in the mind of anyone, even faintly, familiar with the underlying principles of gastro-intestinal function.

Many "case reports" are but modified so-called "testimonials" and leave much to be desired in the matters of diagnosis, follow-ups and controls, and are so obviously one-sided as to forbid serious consideration.

The general employment of such untried, unconfirmed methods of treatment is to be deplored, especially those calling for parenteral administration. In oral medication the wisdom of the body may reject, neutralize or fail to absorb deleterious material, but after injection the reactive, protective mechan-

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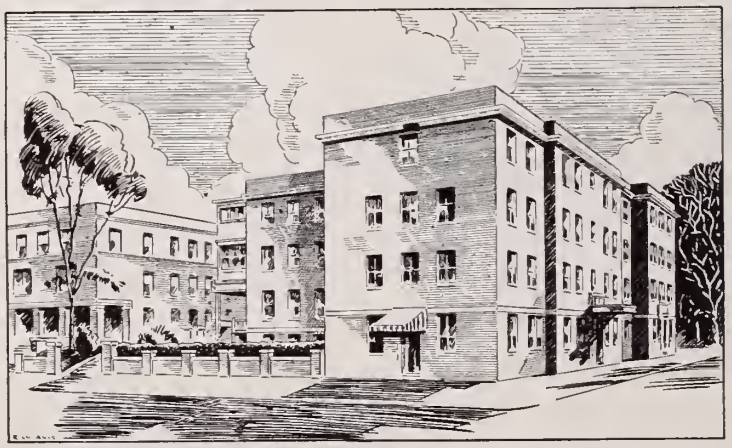

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• The sanatorium is a private institution with 150 beds, located in the Ginter Park Suburb on the Richmond-Washington National automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

• The plant consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.

• The large number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

• The buildings are lighted by electricity, heated by hot water, and are well equipped with baths.

• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

• Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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ism may possibly have serious, instead of supposedly favorable, consequences. There are proper places (the teaching centers) for such clinical experimentation.

Widespread use of new and unauthenticated so-called remedies might serve as an indictment of some of the results of our educational system. But the universality of the practice creates a familiarity that minimizes such a significance.

In the particular matter under discussion, that of peptic ulcer and its treatment by the parenteral injection of the amino-acid histidine, one finds that the fundamental premise—that peptic ulcer is due to a histidine deficit—has not been confirmed.

Instead of hurried clinical application, the more rational procedure would seem to call for an investigation and acceptance of such an etiologic concept before instituting a therapy that will be time-consuming, expensive and of questionable value.

It is generally accepted that peptic ulcer is due not to a single cause but to different factors, namely: (1) chemical, (2) mechanical and (3) susceptibility.

Treatment has usually aimed at reduction of gastric acidity, but histidine injection increases the secretion of HCl; consequently there is a theoretical possibility that such treatment may be inadvisable.

The formation of antibodies (anti-histamine or histaminase) might, by antisecretagogue action, reduce HCl secretion but gastric analyses, after histidine injection, fail to reveal such antibodies.

If careful pre-clinical study had been given to the new method, the theoretical defects would, in all probability, have led to the same conclusion (rejection) as have the clinical trials.

It seems that the final, rational treatment of peptic ulcer will, perhaps, be in the development of some type of antisecretagogue that does not have objectional other actions.

The experimental development of "enterogastrone" by Ivy is the most promising research along this line, but unwarranted conclusions have not been drawn and clinical application of experimental results is wisely awaiting more careful study.

The results reported demonstrate the practical usefulness (to both the profession and the public) of the Council on Pharmacy and Chemistry.

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are to be congratulated upon its origin and successful conduct.

The formation of a similar council for the discussion, rejection or acceptance of "new" surgical measures in this and in other diseases would probably be equally valuable, and is plainly called for. F. G. C.—*Wisconsin Medical Journal.*

REMOVE THE LABEL

If you feel obligated to give to your patient a sample bottle of medicine do not be too tired to remove the label.

The encouragement of self medication which the doctors sponsors when he hands out samples of medicine, or directs the patients to procure certain publicized preparations, is a direct means of creating a customer demand for pharmaceutical manufacturers. In many instances the physician or dentist is the best avenue for these manufacturers to educate the public to the value of their preparations.

The druggists frequently have customers who bring in a sample bottle of medicine and state that sometime ago Dr. ———— gave this medicine to their neighbor, and they think that it might be helpful to them in their present illness, and if so, it would save them the expense of calling the doctor.—*Kansas Medical Journal.*

TUBERCULIN TESTS

After careful consideration the State Medical Society of New Jersey has adopted a resolution favoring mass tuberculin testing of public school children, provided the work is done by competent physicians approved by the county medical society. The medical society added the following comment:

"The Medical Society of New Jersey believes that such procedure, properly conducted, and approved by the medical society, tends to reestablish the leadership of the medical profession in all health matters.

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Since surgery is necessary in a great many patients who are "bad surgical risks" and it is desirable in other cases to shorten the period of postoperative depression, the effect of metrazol was studied in both types of cases. In the first group, one or two cc. of metrazol were usually given both preoperatively and postoperatively at intervals of one to two hours. Normal saline and glucose were used in conjunction with metrazol in a number of these cases and "often desperate cases responded to this combined treatment by lowered pulse rate and the respirations would become deeper and less frequent." The rapidity of the improvement could be regulated by shortening the intervals between the injections of metrazol.

In the second group of cases, two cc. of metrazol were given slowly, intravenously immediately after the operation if it was desirable to have the patient awake within the first hour. This was followed by a second dose within a half hour which would bring about slow, complete awakening. When it was not necessary to obtain the prompt awakening which follows the intravenous injection of Metrazol, but merely to shorten the period of postoperative depression, one dose of two cc. of metrazol was injected intramuscularly.

In summarizing his results Schlaepfer states: "Metrazol is a useful adjunct to the surgical care of debilitated patients, to prevent or to overcome shock. In patients given avertin as a basal or complete surgical anesthetic metrazol gives a striking effect. The period of postoperative hypnosis can be shortened to about one-fourth of the time usually noted."

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small doses of ferrous chloride. Sunlight and fresh air were early and frequently utilized in the program with excellent results. On the first day they were given every two hours 10 or 15 drops of warm water with an eye dropper. Every two hours on the second and third days, each had from 30 to 60 drops of a mixture containing seven ounces of milk, 13 ounces of water and one ounce of corn syrup.

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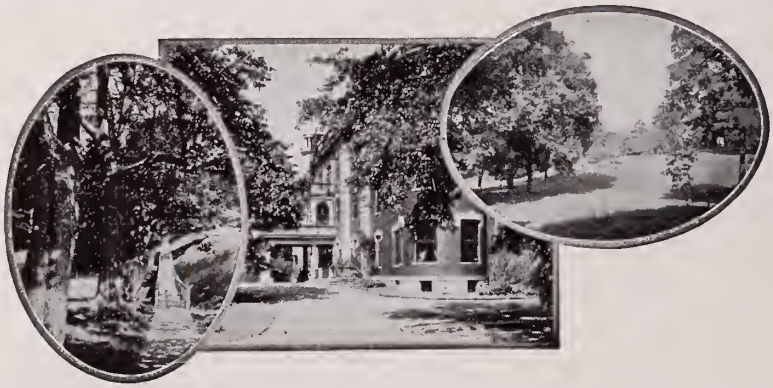

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII OCTOBER, 1936 No. 10

BREECH PRESENTATION*

By George Alvin Ulrich, M. D.

Philadelphia, Pa.

The discussion today will be on a series of 696 breech presentations gathered from two of the institutions with which I am connected.

Breech presentation is that condition in which any part of the lower pole of the fetus presents at the pelvic brim. It is variously designated as frank breech, full breech, knee or footling. Frank breech results from flexion of the thighs and extension of the legs so that the buttocks are presenting and the feet are lying near the baby's neck on the anterior aspect of the chest. Full breech occurs when the fetus is in a position of universal flexion and assumes a squatting attitude with the thighs flexed on the abdomen and the legs flexed on the thighs. Here the feet lie at or near the pelvic brim. In the full breech position the lower extremity may slip through the pelvic brim and partly dilated cervix and present as a knee or a footling.

The designation of position of a breech presentation follows the same order as does any other presentation, the sacrum being the cardinal point. Thus we have L. S. A., R. S. A., R. S. P. and L. S. P., with an occasional one lying in the sacral transverse position. The diagnosis of the position of the presenting part is not easily made and as a consequence most breech presentations will be designated only as breech with no reference to the position in relation to the pelvic gridle. No matter what the position of the breech, or how it is folded or unfolded, all are amenable to the same treatment with very little variation.

Incidence and Causes: The incidence of breech presentation is given by most writers as three in every one hundred deliveries. In hospital practice this incidence is slightly increased, and in the series of cases under discussion the average is four in one hundred cases. It is slightly more frequent in multiparae than in primiparas due to the greater relaxation in the uterine and abdominal walls of the former.

In premature labors breech presentation is frequent. This frequency is due to the fact

*Presented before the West Virginia State Medical Association at Fairmont on June 10, 1936.

that in premature breeches the amount of amniotic fluid is out of proportion to the size of the fetus and the baby is thereby allowed more space in which to move without necessitating any definite adaptation to the uterine cavity. In this series of cases there were one hundred and ninety-three premature by weight, or less than five pounds, and the same number premature by date, thirty-two weeks or less. This number constituted almost 30 per cent of the series.

Dr. E. P. Davis, emeritus professor of obstetrics at the Jefferson Medical College, believes that the condition of the lower uterine segment has much to do with the presentation, and that if this segment is well developed vertex presentation will result. Conversely, if this part of the uterus is poorly developed, breech presentation may occur. The head being the larger and heavier part of the fetus, gravity tends to bring it to the pelvic brim. If the lower uterine segment is well developed, it grasps this presenting part and holds it in the vertex position. If the lower uterine segment is poorly developed, the head is not grasped, the position is not maintained and breech presentation develops. In hydrocephalus the head is too large to be grasped by the lower uterine segment and there is a predisposition to breech presentation.

In hydramnios the increase in fluid results in a decrease in intrauterine tension and an increase in the space for movement of the fetus. It therefore may result in breech presentation.

I am not convinced that either location of the placenta or length of the cord have any bearing upon the position of the child.

Multiple pregnancy is often associated with breech presentation because of the fact that one child lying in vertex and the other in breech occupies less space and accommodation to the interior of the uterus is more easily accomplished than if both offered the same presenting part. In this series of cases there were seventy-eight sets of twins. In ten instances both presented as breech and in sixty-eight occasions one child presented as breech.

Diagnosis: In diagnosis of breech presentation, inspection of the abdomen reveals little. Palpation should, however, afford valuable information. The diagnosis of lie, the position of the back, whether to the right or to the left, is the same as in vertex presentation. Palpation should further reveal whether the hard, round, cephalic portion is at the pelvic brim. There should be no difficulty in the average case in telling where the head lies if both poles of the uterus are carefully palpated. Auscultation may verify the results obtained by palpation. In breech presentations, the heart sounds should be on a level with or above the umbilicus. Internal examination will certainly tell the difference between vertex and breech presentation, but difficulty may be experienced in telling the position of the presenting part. When such difficulty arises, the position may be established by correlating the information acquired by palpation, auscultation and internal examination and by bearing in mind the relative frequency of the different positions. Occasionally there is difficulty in distinguishing between the face and the breech on internal examination. In face the interfrontal suture may be felt and this is an important differential factor between face and breech presentations.

The diagnosis of disproportion is exceedingly difficult because of the distance of the head from the pelvic brim. Where pelvic measurements are small, the modern method of evaluation of the size of the pelvis and the fetal head by x-ray may tell us whether or not the head will pass through the pelvis. Incidentally, the x-ray is always reliable in making a definite diagnosis of breech presentation.

Prognosis: Breech presentation admits of a spontaneous mechanism if flexion is maintained. If flexion is broken up, the child will necessarily have to be extracted and the mother is exposed to slightly more danger of infection because of the manipulation. This danger, however, is very slight if cases are

properly conducted. In breech there is more danger of exhaustion of the mother due to a slower dilatation of the cervix with a consequent prolongation of the first stage of labor. The infant mortality varies between five and twenty per cent depending upon the observer. Prolapse of the cord is more apt to occur, thus endangering the child's life. In extraction the child is, for some reason or other, exposed to the danger of intracranial hemorrhage. In this series twenty-four babies died from tentorial tears. All of these babies were delivered by extraction, many with the after-coming head forceps. With extraction, there is also a danger of fracturing the long bones of the child's extremities.

Labor in Breech Presentations: In breech presentations, the first stage of labor is apt to be unduly long because the soft parts of the breech do not act so well as a dilator, because the membranes are apt to rupture prematurely, and because descent may be retarded, especially in full breech presentation, by the feet becoming wedged at the pelvic brim. Normally, as the child passes through the pelvis and the breech gets upon the pelvic floor, labor pains are very much stimulated, and if flexion is maintained, the child may be expelled very rapidly. The only obstacle to spontaneous expulsion will be the breaking up of flexion of the arms and the head, and this will not occur unless traction is made upon the body of the child.

Delivery in Breech Presentation: In the delivery of breech presentation it must be borne in mind that this mechanism may be spontaneous and that there should be no interference until there is a definite indication. The fetal heart sounds and the condition of the mother must be constantly studied. So long as these remain satisfactory, there is no reason for interference. The best method, especially in frank breech presentation, is to play the game of watchful waiting. There should, however, be in readiness forceps suitable for the application to the after-coming head. When the buttocks begin to appear at the external genitalia, if delivery is done at home, the patient should be turned across the bed with her feet on two chairs and the legs and thighs separated. An assistant should be present who can anesthetize the patient at a moment's notice. As the buttocks emerge, the baby should be covered with a warm, moist sterile towel to prevent premature efforts at respiration. The body of the child should be supported and turned somewhat up towards the pubic bone. In this way, the arms and shoulders will pass very readily over the pelvic floor, and the head may be expressed by making slight pressure over the abdomen above the pubic bone. In spontaneous cases, the head passes very rapidly and quickly with but very slight laceration of the perineum. The greatest difficulty in this method of delivery lies in the fact that very few physicians, even though they be obstetricians, have the patience and courage to wait for the delivery. In too many cases, just as soon as a breech presentation is discovered, a panic develops and the first means of traction upon the baby is used and flexion is broken up necessitating extraction of the child under the most adverse conditions. Personally, I feel that if the progress of labor is satisfactory, even though not so rapid as in vertex presentations, if the membranes can be preserved and the patient's strength conserved, there will be less danger to mother and child and better results will be obtained by following the rule of non-interference.

Extraction in breech presentation is not a simple procedure. In full breech presentations where the feet are in or at the pelvic brim, traction may be made by bringing down the anterior foot. If the posterior foot is brought down in error, traction upon it will simply pull the breech of the child against the pubic bone and therefore the anterior foot must also be brought down before the child can be extracted. This unfolding of the feet in a full breech constitutes what is referred to as decomposition.

In the delivery of a frank breech, the feet, as before stated, are near the child's neck and cannot readily be grasped. In these cases,

traction may be made after the breech is on the pelvic floor by hooking the index finger first into the anterior groin and by traction upon it and pressure over the fundus of the uterus, the child may be brought down sufficiently to get the forefinger of the other hand in the posterior groin. Traction on the frank breech may be made by the application of a close-fitting forceps to the trochanters of the child. This, however, is seldom necessary. While making traction an assistant or nurse should make gentle pressure upon the fundus of the uterus sufficient to keep the child's head and arms flexed. If this pressure be efficiently maintained, the arms will rarely go into the nuchal position or the head become sufficiently extended to impede its passage through the pelvic brim. Traction should always be made in the axis of the pelvis and should be applied very gradually, brought to its maximum and again gradually released. There is no procedure in obstetrics in which force should be suddenly applied or suddenly released as either would be very dangerous to the child. In extracting the child, the mechanism of labor and the position of the child must be kept in mind and if the shoulders do not emerge easily, the child's body may be rotated while gentle traction is maintained so as to turn it from a right to a left position pulling strongly backward towards the perineum until the shoulder blades impinge well under the pubic bone. The arm may then be brought out by either one of two maneuvers. The first maneuver consists of passing two fingers above the arm to the elbow and flexing or pushing the arm through the vaginal outlet. The other maneuver consists of placing the fingers against the shoulder blade and pushing the shoulder blade backward toward the spine until the arm readily slips out. To get the other arm, the child is rotated so that the other shoulder comes anterior, and by pulling down strongly toward the pelvic floor, the second shoulder blade comes under the pubic bone and the arm is released in the same manner as the first.

The delivery of the after-coming head is the most difficult part of the procedure. The first step in this is to pass the fingers along the chest of the child, feeling for the child's mouth, inserting the middle finger and pulling the chin towards the baby's chest. This will flex the head. Before this is done, no amount of traction, pressure or even the application of forceps, no matter how strenuously the effort is made, will be able to bring down the child's head. Remember that the finger is placed in the mouth to make and maintain flexion only and that no traction must be made on this finger. The head is brought to engage by pressure upon the head above the pubic bone. After the head is engaged it slips readily to the pelvic floor and one of two methods may be used to deliver it. One is the Mariceau-Smellie-Veit maneuver which consists of placing the child astride the arm, the middle finger in the mouth to keep the head flexed, the index and third fingers resting against the shoulders of the child. This hand and arm carry the child upwards toward the pubic bone, while with the other hand, superpubic pressure is made upon the child's head. Where an assistant is present, he may make the pressure above the pubic bone while the operator grasps the child with the other hand upon the shoulders making slight traction while the pressure is applied. If this maneuver is carried out properly it will seldom fail to deliver the after-coming head, and Potter states that he has rarely found use for the after-coming head forceps. The second method is the application of a forceps suitable for the delivery of the after-coming head. Possibly the best forceps for this is the Piper after-coming head forceps especially devised for this purpose. Any ordinary forceps, such as the Simpson, the Tucker McLain, Zweifel or any similar forceps may very readily be used. They must be applied to the sides of the child's head and traction must be made in the axis of the pelvis. The mistake of attempting the application of the forceps upon the unengaged head must never be made. During these manipulations, and especially during the application of forceps, the cord is

apt to be compressed and constitute a very grave danger to the child. Extraction with or without the use of the after-coming head forceps is a serious menace to the child as shown by the series under consideration in which twenty-four babies died of some form of intracranial hemorrhage which resulted from extraction, whereas there was none resulting in the spontaneous deliveries.

The most difficult procedure in obstetrics is the manual delivery of a frank breech presentation as here the feet are up near the baby's neck. To accomplish delivery the patient must be completely anesthetized so that the uterus will be relaxed to the same extent as when internal version is done. The hand opposite the fetal extremities is selected. Thus, when the back of the child lies to the mother's left, the left hand is used, and when the back of the child is to the right, the right hand is used. Under absolute antiseptic precautions, preferably using a gauntlet glove, well lubricated, the hand is folded in a cone and passed up into the uterus. It will be found that it is often easier to grasp one foot, gently unfold it, and then go up, grasp the other foot, and unfold it, rather than to attempt to unfold both feet at once. After both feet are brought down, the extraction will follow the same general rule as laid down in the previous extraction, *i. e.*, gentle pressure over the uterus while traction is made upon both feet, the buttocks, hips and body of the child gradually brought over the pelvic floor, and the shoulders and head delivered. This procedure must never be undertaken where the cervix is not completely dilated or where there is disproportion between the head and the pelvis. On account of the intrauterine manipulation and the complete relaxation with the anesthetic it is well to pack the uterus firmly with iodoform gauze in order to prevent postpartum hemorrhage.

Complications: Prematurity and breech go hand in hand and very little can be said about it as a complication. However, when prematurity occurs with maceration of the fetus, care must be exercised when pulling on the breech as the body is very easily pulled from the head, leaving a difficult situation. In order to prevent this, wait for a full dilatation of the cervix before attempting the extraction of the child. Inserting the fingers in the baby's mouth, keeping the head well-flexed will help to prevent this complication and expedite the delivery. When separation of the head from the body does occur, the obstetrical forceps are as a rule of no value as the head is too small. To remove the head, it may be grasped by any large strong forceps passed through the foramen magnum or by grasping the lower jaw of the child when gentle traction may remove it. No efforts, however, will be effective unless the cervix is completely dilated.

Premature rupture of the membranes is more frequent in breech presentations than in any other condition and allows another complication to occur; namely, prolapse of the cord. The rupture of the membranes here is due to the irregular presenting part, the fetus being pressed down against the membranes with a knee or foot protruding. Nothing can be done to prevent this complication, but every attendant at a breech labor should be exceedingly careful, while making examinations, not to rupture the membranes. Special care must be taken should a uterine contraction occur during the process of examination. Where the membranes rupture prematurely, labor is prolonged, exhaustion is more apt to occur and infection may enter the uterus. The treatment for premature rupture of the membranes in this condition is to give the patient proper sedation and to wait for the dilatation to occur. Under no condition, as before stated, should interference be practiced before the condition of the child or mother demands it. It will very seldom be necessary to dilate the cervix manually or use the rubber dilating bag.

Prolapse of the cord, as before mentioned, is frequent in breech presentation due to the irregular presenting part. Nothing can be done to prevent this unfortunate occurrence. As soon as the cord is discovered in the

vagina, careful examination must be made of the cord to ascertain the presence of pulsation. The heart sounds should be carefully listened for, and if it is certain that the child is dead, there is no need to interfere. Should the cord, however, be pulsating or the heart sounds of the fetus be audible, an attempt may be made to replace it or to place it in that part of the pelvis where the fetus will not constrict it. Should the cervix be completely dilated, an immediate extraction of the fetus may be done in time to save the baby's life. Should the baby be considered of sufficient importance to the mother, as is often the case in the elderly primiparous patient, the only way to secure a living child would be abdominal Caesarean section, although there may be a few cases where the dilatation of the cervix may be completed manually or where the replacing of the cord, with the insertion of a bag, may secure the dilatation.

In breech, with disproportion, the treatment should be the same as any other cases of disproportion, *i. e.*, vaginal delivery should not be attempted and abdominal delivery substituted. When a patient with a small pelvis presents herself, careful study of the size of the head, the size of the pelvis by palpation, pelvimetry and the x-ray must be done and a decision must be made either to do an elective section or attempt the vaginal delivery. If vaginal delivery is attempted, a disastrous result to the child may be expected due to the fact that the after-coming head is too large to pass the pelvic brim. We are left with the body delivered and the head riding above the pelvis. This same condition may be met with in a hydrocephalic child. There is only one solution to these conditions and that is a craniotomy on the after-coming head. Most text-books advise, when doing a craniotomy on the after-coming head, to carry the child well up, over the pubic bone, and to enter the cranium through the roof of the mouth. I have always found it much easier to carry the child well backward, place the piercing instrument or a heavy scissors against the occipital part of the cranium and to enter at this point. If it is done for hydrocephalus, the fluid readily escapes; if not, the contents of the cranium must be removed and the skull crushed with a close-fitting pair of forceps or a specially devised instrument.

General Information

Total deliveries (1930 to 1935 inclusive)	17,878
Total breech presentations	696
(Approximately 1 breech to 25 deliveries)	
Multipara	10,716
Multiparous breeches	448
Died undelivered	1
	447
(Approximately 1 to 24, or 4.17%)	
Primipara	7,162
Primiparous breeches	248
(Approximately 1 to 26, or 3.46%)	
Breech presentations	696
White	490
Colored	206
Ward	549
Private	147
Primipara	248
Multipara	448
Registered	625
Unregistered and emergencies	71
Admitted in labor	573
Admitted before labor	123
Delivered vaginally	650
Caesarean section	46
Membranes ruptured before	232
Membranes ruptured in labor	327
Not noted	91
	650
Breech delivery	650
Twins—both breech	10
Total breech babies	660
Extracted	438—66.4%
Spontaneous	220—33.3%
Craniotomy	2— .3%
	660
(After-coming head forceps used	212—32%)

Heart sounds O. K. 557
Heart sounds not heard 80
Heart sounds questioned 40
Not given 19

Character of previous labors:

Multipara 447
Noted 373
Not noted 74
Noted: "easy, spontaneous, normal, long, difficult, short, etc." 289
Forceps 41
Breech 23
Caesarean section 12
Version 7
Craniotomy 1

Presentation of breech deliveries:

Given as breech only 216
L. S. A. 207
R. S. A. 150
R. S. P. 47
L. S. P. 29
L. S. T. 6
R. S. T. 3
Transverse lie 2
Compound 2

Frank 45
Foot 40
Full 4
Knee 2

Length of labor:

Average ..... 12 hours, 9 minutes
Average of 3rd stage ..... 8 minutes

Episiotomy 83
Lacerations 170

Total 253
(Approximately 3 to every 8 cases)
(Perineal injuries—37.7%)
(Cervical lacerations—not inspected)

Rupture of the uterus 1

Analgesias and anesthesias from one service only:

Analgesia 169
Nembutal and scopalomine 53
Morphine and scopalomine 39
Morphine 42
Rectal ether 19
Nembutal 17
Barb-eth-oil 11
Scopalomine 5
Luminal 4
Phenobarbital 2
Codeine 2
Codeine and luminal 1
Nembutal and morphine 1

Anesthesia 430
Ether 248
Chloroform 59
Gas and ether 46
Gas and oxygen 29
Gas-oxygen-ether 23
Ether and chloroform 2
Local 3
Gas 20

Complications of pregnancy 195
Toxemia and eclampsia 40

Placenta Prævia:

Marginal 7
Central 4

Premature separation 9
Indefinite bleeding 10
Respiratory infections 7
Heart disease 9
Polyhydramnios 6
Cystitis 3
Pyelitis 2
Bartholin's abscess 3
Pubic separation 1
Epilepsy 1
Fibroma of uterus 4
Syphilis 9
Anemia 37
Simple nausea 49

Medical inductions 54
Surgical inductions 7

Complications of labor 61
Prolapse of cord 22
Retained placenta 6
Contraction ring 2
Postpartum hemorrhage 20
Fibroids 6
Adherent placenta 1
Rupture of uterus 1
Bladder injury 1
Prolapse of the hand 1
Cord around neck 1

Maternal morbidity 113
Sapremia 41

Engorged breasts	16
Pyelitis	13
Cystitis	3
Endometritis	10
Acute mastitis	3
Infected lacerations	2
Puerperal sepsis	2
Parametritis	1
Peritonitis	2
Cholecystitis	1
Hemoplegia	1
Upper respiratory infection	11
Postoperative reaction	2
Cause unknown	7

Morbidity—17.3%

Maternal mortality ..... 8, or 1.15%

a. Breech deliveries ..... 5, or .7%
- Shock and collapse 1
- Puerperal sepsis 1
- Rupture of uterus before admission ... 1
- Pulmonary embolism 1
- Pneumonia and pulmonary edema 1

b. Caesarean section ..... 3, or .45%
- Shock and collapse 1
- Pneumonia and endocarditis 1
- Peritonitis 1

Data Concerning Caesarean Section Associated With Breech

Caesarean section associated with breech .. 45 times

Primipara	20
Multipara	25

	Prim.	Mult.	Total
Born alive	20	23	43
Still-born	—	3	3
Died before labor	—	2	2
Died after labor	—	6	6

Previous Caesarean sections	12
Repeated	10
Delivered spontaneously	1
Extracted with A. H. F.	1

Indications:

Contracted pelvis and disproportion	16
Elective	8
Previous sections	6
Placenta prævia	5
Toxemia	1
Toxemia and heart disease	1
Rupture of the uterus	2
Premature separation of placenta	1
Failure of forceps	1
Chronic nephritis	1
Fibroids	1
Twins with sterilization	1
Not given	1
	45

Weights of Caesarean Section deliveries:

Weight	Prim.	Mult.	Total
Under 4 lbs.	1	3	4
4 to 5 lbs.	—	2	2
5 to 6 lbs.	2	2	4
6 to 7 lbs.	2	9	11
7 to 8 lbs.	8	6	14
8 to 9 lbs.	6	1	7
More than 9 lbs.	1	2	3
	20	25	45

Average weight of babies—6 lbs., 5½ oz.

Type of Sections:

Classical	35
Classical with sterilization	4
Low	1
Low with sterilization	1
Hysterectomy	4
	45

Data Concerning Bleeding Associated With Breech Deliveries

Bleeding associated with breech deliveries: 29 times, or 4.1%

Indefinite bleeding ..... 9, or 1.4%
Placenta prævia ..... 11, or 1.6%
(Marginal ..... 7)
(Central ..... 4)
Premature separation of placenta ..... 9, or 1.4%

Period of gestation when bleeding occurred:

Marginal placenta prævia—3 at 6 mos.; 1 at 7½ mos.; 1 at 8 mos.; 2 at 9 mos.

Premature separation of placenta—1 at 6½ mos.; 1 at 7 mos.; 3 at 8 mos.; 3 at 9 mos.; 1 not given.

Central placenta prævia—1 at 7 mos.; 1 at 8 mos.; 2 at 9 mos.

Data Concerning Twins Associated With Breech

Twins associated with breech ..... 78 sets

Vertex and breech 44

Breech and vertex 21
Breech and breech 10
Breech and transverse lie 1
Breech and ? 2

Delivered:

Extraction and version 20
Spontaneous and extraction 24
Forceps and extraction 12
Both extraction 7
Both spontaneous 11
Forceps and version 1
Caesarean section 3

Breech deliveries of twin pregnancies....88 babies

Born alive 79
Still-born 9

Died before labor 7
Died during labor 2
Died after delivery 11

Twins occurred in primiparæ .....18 times
Twins occurred in multiparæ .....60 times

Twins in 11.2% of all breech cases—1 set of twins to every 9 breech cases.

Breech Deliveries in Multiparae

Multiparrous breech deliveries 448
Caesarean sections 25

Breech deliveries 423
7 sets of twins, both breech 7

Total breech babies 430

Babies' Weight	Born Alive	Still Born	Died During Labor	Died Before Labor	Died After Delivery	Total Babies	Total Mortality	% of Mortality
Not given	4	20	17	3	1	24	21	87.5
4 lbs. minus	45	31	29	2	40	76	71	93.4
4 - 5 lbs.	35	8	5	3	5	43	13	30.2
5 - 6 lbs.	55	5	3	2	5	60	10	16.6
6 - 7 lbs.	83	3	1	2	4	86	7	8.1
7 - 8 lbs.	73	5	1	4	1	78	6	7.7
8 - 9 lbs.	34	1	0	1	1	35	2	5.7
9 lbs. plus	23	5	2	3	6	28	11	39.3
Total	352	78	58	20	63	430	141	32.6
Total % age ...	81.6	18.4	74.4 Of Still-Born	25.6 Of Still-Born	17.8 Of Live Births		32.6 Of Total	

Breech Deliveries in Primiparae

Primiparous breech deliveries 248
Caesarean sections 20

Breech deliveries 228
3 sets of twins, both breech 3

Total breech babies 231

Babies' Weight	Born Alive	Still Born	Died During Labor	Died Before Labor	Died After Delivery	Total Babies	Total Mortality	% of Mortality
Not given	2	5	4	1	1	7	6	85.7
4 lbs. minus ...	28	13	12	1	24	41	37	90.2
4 - 5 lbs.	14	3	2	1	4	17	7	41.2

(*Continuation of this table will be found on the following page*)

Babies' Weight	Born Alive	Still Born	Died During Labor	Died Before Labor	Died After Delivery	Total Babies	Total Mortality	% of Mortality
5 - 6 lbs.	33	1	0	1	3	34	4	11.7
6 - 7 lbs.	50	3	1	2	2	53	5	9.4
7 - 8 lbs.	58	2	0	2	1	60	3	5.0
8 - 9 lbs.	14	1	0	1	0	15	1	6.6
9 lbs. plus	3	1	0	1	1	4	2	50.0
Total	202	29	19	10	38	231	65	28.1
Total %	87.4	12.6	65.5 Of Still-Born	34.5 Of Still-Born	18.8 Of Live Births		28.1 Of Total	

Babies Delivered by Breech—By Weight

Weight	Babies	Ex-tracted	% Ext.	Spon-taneous	% Spon.	Caesarean Section	% C. S.	Total Babies
Not given ...	31	10	32.3	21	67.7	—	—	31
Under 4 lbs. .	117	52	44.5	65	55.5	4	3.3	121
4 - 5 lbs.	60	37	61.7	23	38.3	2	3.2	62
5 - 6 lbs.	94	59	62.8	35	37.2	4	4.1	98
6 - 7 lbs.	139	106	76.3	33	23.7	11	7.8	150
7 - 8 lbs.	138	109	77.6	31	22.4	14	9.2	152
8 - 9 lbs.	50	39	78.0	11	22.0	7	12.3	57
Over 9 lbs....	32	28	87.5	4	12.5	3	8.5	35
Total	661	438	66.3	223	33.7	45	6.3	706

Deliveries by Decades in Patients' Ages

Breech cases 696
Caesarean sections 46

Breech deliveries 650

Para	10-19 Yrs.	20-29 Yrs.	30-39 Yrs.	40-49 Yrs.	Total	%
1	61	132	34	1	228	35-1
2	8	86	46	1	141	21.7
3	1	47	33	1	82	12.7
4	0	20	29	1	50	7.7
5	0	22	23	2	47	7.2
6	0	5	17	4	26	4.0
7	0	9	17	1	27	4.1
8 plus	0	4	36	9	49	7.5
Total	70	325	235	20	650	
%	10.7	50.0	36.1	3.2		

Breech Babies

Male 331
Female 329

Average Weight—6 lbs., 6 oz.
Largest—12 lbs.

Causes of Fetal Mortality in Babies Over 4 lbs.—73, or 16.1%

Intracranial hemorrhage 24
Macerated 10
Prematurity 9
Atelectasis 3
Asphyxia 3
Pneumonia 3
Anencephalus 4
Craniotomy 1
Lung abscess 1

Congenital hemolytic icterus	1
Hydrocephalus	2
Peritonitis	1
Prolapse of cord	1
Spinabifida	2
Laceration of liver	1
Edema of brain	1
Not given	6

Mortality

Still-born	107
Died before labor	77
Died during labor	30
Died after delivery	101
Total mortality	208
(31.5%)	

Total Infant Mortality

	Total	Primi-parae	Multi-parae	%
Babies	661	231	430	
Born alive	554	202	352	85%
Still-born	107	29	78	15%
Died before labor	77	19	58	72% of Still-born
Died during labor	30	10	20	28% of Still-born
Died after delivery	101	38	63	18% of Live Births
		31.5%	24.6%	32.7%

Weight	Total Babies	Total Mortality	% Mortality
	660	208	31.5%
Under 4 lbs. & not given	147	135	91%
Over 4 lbs.	513	73	16%
Over 5 lbs.	453	52	11.5%

Breech Deliveries—Babies Over Five Pounds

Under 5 pounds, the baby should offer no problem in breech labor.

Babies' Weight	Born Alive	Still-Born	Died Before Labor	Died During Labor	Died After Delivery	Total Babies	Total Mortality	% Mortality
5 - 6 lbs.	88	6	3	3	8	94	14	15.0
6 - 7 lbs.	133	6	2	4	6	139	12	8.5
7 - 8 lbs.	131	7	1	6	2	138	9	6.5
8 - 9 lbs.	46	2	0	2	2	50	4	8.0
Over 9 lbs.	26	6	2	4	7	32	13	50.0
Total	426	27	8	19	25	453	52	11.5 (uncorrected)
	94.0%	6.0%	29.6% Of Still-born	70.4% Of Still-born	5.8% Of Live Births		11.5% (uncorrected)	

In babies weighing over five pounds, the mortality was 52, or 11.5%.

Deducting the premature, macerated, deformed, and those dying of coincidental disease (in all, 20 babies), leaves a total of 22, with a corrected mortality percentage of 7.4%.

Discussion

Dr. James R. Bloss, Huntington: The fact that breech presentations are present in only three to four per cent of deliveries means that they are rare enough that most physicians have had but little personal experience with them. Individual physicians in general practice have so few to deal with that they do not become skilled in the performance of the technique for handling them. I am sure that this fact has much to do with the "panic" which Dr. Ulrich described as occurring when the discovery of a breech presentation is made.

I would call your attention to the fact, which Dr. Ulrich presents, that we must all recognize that the fetal mortality is higher in the mechanism of breech delivery than where the presentation is cephalic. This is true even in the hands of experienced and skilled obstetricians. It is not to be expected that those practitioners whose obstetric experiences may be limited to possibly twenty-five or fifty deliveries each year will become masters of the technique of this type of case. It is only by exper-

ience and becoming familiar with the mechanism and more or less standardized procedure that we expect to have a lowering of the incidence of injury or death of the babies.

The essayist has called our attention to the difference in the type of breech presentation, classifying them as full, frank, knee and footling. He has also called our attention to the fact that an occasional patient may deliver herself spontaneously as it were. These particular cases are few and far between, however, in my experience, and he warns us that "extraction in breech presentation is not a simple procedure."

I would recommend that when this paper of Dr. Ulrich's is printed in the JOURNAL, it be very carefully studied, for his description of the more or less standardized technique of delivery in this type of case is so lucidly presented that it would seem to make extraction a procedure of great ease. Do not be misled by this however, for I know of nothing in the whole field of obstetric practice which requires greater skill or better judgment than a breech extraction. There is nothing more difficult to accomplish than a safe delivery in these cases. This comes only with experience.

Dr. Harry G. Steele, Bluefield: When Dr. Ulrich comes here, with the experience that he has, and tells us what mortality they have in breech presentations and other branches of obstetrics, I feel that we do not know anything about obstetrics and it is up to us to learn more about it.

Many times the reason for the mortalities and the morbidities is that we do not study our obstetrics enough. I feel like saying to some of you old fellows—not these young men, they know more about obstetrics than we did when we came out of school—"How many times have you gone back to school and taken a postgraduate course in obstetrics? How many times have you studied the late books on obstetrics?" That is the only way we are going to reduce the mortality. If you learned obstetrics twenty-five or thirty years ago, as I did, and then think you are going to do good obstetrics, you are sadly mistaken. I went back and took several postgraduate courses under Dr. Ulrich and Dr. Bland, and still I feel I know very little obstetrics.

I want to ask Dr. Ulrich a few questions. I had a few cases of breech presentation recently, three in succession, and in two of them the baby's head was deformed. Is there any way we can mould these heads to anything like normal shape after they are delivered, or should we try to overcome it before the baby is born?

I would like you to ask yourselves this question: "Can you determine a position and presentation by palpation?" I doubt very much if some of the older men can. The younger men recently out of school, possibly can tell us something about that. I did not learn that until a few years ago, and I cannot say that I know it yet. That is one thing that we men who are doing obstetrics ought to learn.

It was interesting to hear Dr. Ulrich say that patients, in labor, are often fed throughout the delivery.

One other point which Dr. Ulrich brought out I hope you will remember. Whether you deliver the baby head first, breech or with forceps, never make a sudden pull or jerk, for that is when damage is sometimes done. I recall to mind making a sudden pull on a baby's head in delivering large shoulders, producing Erbs' paralysis.

Dr. Ulrich's message to us today is to wait and let them deliver themselves when possible.

Dr. A. Morgan Dearman, Parkersburg: The incidence of breech presentation will vary with the number of referred cases and, as stated, is higher in hospitals. Pinard's statistics on 100,000 cases give 1.6 per cent full term, 3.3 per cent in premature. J. Kiss reports 500,000 cases at two per cent. An analysis by Posner and Pulver at Harlem Hospital reveals no change in ratio of vertex to breech as to age of an old and young group.

Nathanson at the Woman's Hospital, reporting 372 cases under twenty and over thirty-five, gives an incidence of six per cent in the old group and half that for the young group.

A report from the University of London on 11,990 cases states that head presentations diminished with increase of parity, transverse presentations increased with parity, but breech presentations were equal in all cases.

Pinard states that 1.6 per cent or one to 62 are breech at full term, 3.3 per cent or one to 30 in prematures. From this we might infer that one-half change from breech to vertex before labor. External version is described in texts and may be done from the thirtieth week until the first stage of labor before the head is engaged. Bandages are recommended to hold the new positions but are rarely successful and may require repeated versions.

The essayist might give his opinion as to results

in external versions. I would also like a few details in his 696 cases on:

1. Maternal mortality.
2. The number of spontaneous deliveries.
3. How often forceps are used on the after-coming head.
4. How often episiotomy was done, with and without forceps.
5. How many craniotomies.

Davis' Gynecology and Obstetrics gives fetal mortality at 10 per cent in breech cases.

Premature rupture of the membranes is known to increase the frequency of prolapse of the cord and give greater possibilities for puerperal infection, but I question that it prolongs labor. Has anyone tested this long proclaimed assertion in breech cases? A record of 100 cases with and without early rupture in breech presentations would be convincing. I am of the opinion that we overestimate dry labor. E. L. King of Tulane University states that dystocia credited to dry labor is usually due to other complications such as pelvic disproportion or occiput posterior positions. King reports that 200 vertex cases with deliberate rupture of the membranes delivered one-third quicker than a like number without rupture.

In regard to delivery in cases other than spontaneous, I would like to emphasize three points:

1. Dilatation must be complete before any attempt to deliver, that is the cervix must be softened and easily admit a large fist.
2. Anesthesia should be as deep as for abdominal operation, or no anesthesia unless morphine sulphate is given at least two hours, or better four to six hours, before delivery. With partial anesthesia the patients will not coöperate. With deep anesthesia the cervix dilates and the perineum will relax; perhaps better, a routine perineotomy. Application of forceps to the after-coming head is very difficult or impossible with the patient bearing down, and requires deep anesthesia. If an anesthetist is available, nitrous oxide may be given.
3. The patient must be in the lithotomy position on the table or at the edge of the bed if at home. A portable operating table is available which fits under the patient's hips and is at the bed edges and has holders for the knees. I have constructed a table which I find very useful for repairs and breech deliveries.

Dr. C. H. Maxwell, Morgantown: I have had probably as many deliveries as anybody in the house, except these big folks in Philadelphia. I have had 1,350 cases and I have had two deaths, one-sixteenth of one per cent. I stay right on the job while the baby is being born. I see that the mother is bathed, clean pads put on, an abdominal binder put on, with clean sheets, before I leave. I do not leave that for some old granny to do. I have been doing that ever since I have been practicing medicine. I have not changed my practice of medicine since I learned it in Denver forty years ago. Of course we have pituitrin and things like that since then, but the technique of delivery is just the same. We can diagnose almost all the cases through abdominal palpation if the woman does not have too much fat on her. We can guess the sex of the baby sometimes—I always guess a boy and I miss it sometimes.

I have been to cases when another doctor got there before I did and cut the cord and said, "Leave the woman alone until tomorrow and then clean up her bed." Is it any wonder that we have childbed fever, that we have infection, when we leave that woman lying there in that blood and dirt, maybe with nothing underneath her to keep the bed from getting stained? It is no wonder we have people die in childbirth.

Dr. George Alvin Ulrich, Philadelphia, (closing the discussion): Dr. Steele's question was one about the baby with the misshapen head. As far as the shape of the head is concerned, I do not think there is anything a person can do to change it. The natural tendency is for it to come back to a fairly normal shape. Among the men here there must have been one or two delivered by breech presentation, and I see no deformed heads. No effort is made to reshape all the heads that are out of shape by forceps delivery and things of that sort; they all come back. Of course they are not symmetrical exactly, but we cannot make a perfect head. If you look at an audience you see one man with his head tilted this way and another with his head tilted that way. If you ask the eye man why that is he will say it is because the man has astigmatism and he turns his head so he can get a better picture on his retina; the ear man will say he turns his better ear to get the sound; the orthopedist will say that the muscles on one side are better developed than on the other and pull the head to that side. The obstetrician says there was a little lateral flexion of the child's head at birth and that habit is kept up; those with the head to the right were in the position with the back to

the mother's left, those with the head to the left were born with the back to the mother's right, and those that hold their heads straight were either born by breech or cesarean section.

The opinion on external version is that it is a lot of hocum. You can turn that child around, but the natural tendency is to slip back to where it was before. If you turn the child at seven or eight months you might as well leave it alone. I have tried it. I remember the first case I ever tried when I was a student. I had a woman who had a child in a transverse lie. I went every eight or ten days to see the mother and turned the baby every time I went. Finally all I had to do was go there and snap my fingers and the baby turned over of its own accord. I turned the baby when she went into labor and held it there while I ruptured the membranes. When I ruptured the membranes she started bleeding and I found there was a partial placenta prævia. When I started to put on the forceps the cord came down. I had to push the cord back and do an internal podalic version to get the baby out. That made me kind of sick of that procedure. I do not think we get very far by doing external version.

The number of spontaneous deliveries are in my paper. There was practically no difference when we took the size of the baby into consideration, in percentage. As I said, a lot of the smaller babies were extracted by the interne and by the resident under the supervision of the chief in order to give them experience. So out of the 660 there were 438 extracted and 220 spontaneous. There you get a discrepancy of two. There were two craniotomies and both of those, I think, were hydrocephalic.

How often were forceps used on the after-coming head? The after-coming head forceps were used in 212 cases or 32 per cent of the deliveries. That is in one out of every three we used the after-coming head forceps.

How often was episiotomy done? That depended entirely on the chief. I very seldom do an episiotomy and I do not knew that I have ever done it where the child was presented by breech. The breech coming first, the delivery of the buttocks, the body, the shoulders, usually stretches the perineum so gradually that the head causes very little tear, and I contend that if a breech case is properly delivered that woman will have much less laceration than she would have had were the baby in a head presentation.

How many craniotomies? There were two.

The maternal mortality in the entire series; seven patients died. Understand, three of them were Cesarean sections, so there were four women who died of breech deliveries. Some of these women were brought into the hospital after the breech was delivered or partly delivered and left on the outside. One died of shock and collapse, one died of puerperal sepsis, one died of rupture of the uterus before admission, one had pulmonary embolism, and the other had pneumonia with pulmonary edema.

I want again to stress that one-third of these babies were delivered without interference. Understand that we are instructing students, internes, and residents; consequently some of these babies are extracted and the after-coming head forceps used where ordinarily, if we were doing our own private practice, they would not be used. I feel safe in saying that if you would let breech labors alone possibly somewhere between seventy-five and eighty or ninety per cent of them would deliver themselves.

ANTIVENIN SERUM

Painful as it may be to some to have this knowledge divulged publicly, spiritous liquors are not the best antidote for snake bite. The chief service of the remedy is to render the snake-bitten person more or less indifferent to his predicament, or enthusiastic perhaps, about being bitten again, according to Dr. Lee D. Cady, author of "Snakes in the Service of Science" in the September *Hygeia.*

The antivenin serum injection of the proper sort is by far the better for the saving of life or the amelioration of symptoms.

Of course it has been known for many years that if one had the good fortune to survive the first bite, one has a much better chance to live after the second poisoning from another snake of the same species. This may be comforting knowledge, but the hard-bitten professionals do not have their favorite rattlesnake give them an eye opener of venom every morning.

Venomous snake secretions have, in the main, three poisonous elements in them. These vary markedly with the species of the snake, and the kind of antivenim to be used in a snake accident must fit the case. The collubrine snake venoms possess a predominantly neurotoxic action; that is, they are poisonous to the nervous system.

The venom of the daboia (Viperi Russelli) and the Bungarus have an interesting ability to cause blood to clot very quickly, even while circulating.

THE PERINEUM DURING LABOR*

By WALTER W. POINT, M. D.
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THE statement, "an obstetrician is known by his postpartum perineums", is just as much an axiom as the old saying, "a man is known by the company he keeps". Only in fairly recent years has the delivering physician given the perineum that care and protection which it merits during labor. The result is that the gynecologist and general surgeon doing this type of repair work weeks, months, or years after the damaging delivery, will in most cases attest the fact that the necessity for such reparative procedures is becoming increasingly less frequent.

There is but one explanation for this change in conditions. An unrepaired, or poorly repaired laceration of the cervix or perineum is not considered properly to be a heritage of the woman who has borne children or a badge of motherhood creditable to the attending physician at the time the damage was done. Naturally, better obstetrical teaching, so badly neglected until recent years, even by our foremost medical schools, a keener realization of the future ill effects on the mother, the education of the prospective mother to the point where she knows that such injuries should have been prevented, or properly repaired at the time of delivery, the innate pride of the obstetrician, and lastly, that great incentive—competition—all of these are reasons why the surgeon is steadily but surely losing part of that great source of operative material among the women of previous years.

Conceding the fact that a delivered woman should be left in as nearly perfect condition as it is humanly possible, why should we obstetricians not give that care, skill and prophylaxis which good obstetrics has always demanded but so often has not received? In no other branch of the profession is there to be found such frequently poor end results—results that account in part for our high mortality and morbidity figures and which injure everyone concerned with the case.

Let us take as an example an average primipara with a normal head presentation. The scope of this paper precludes more than a mentioning of analgesia and anesthesia. As a rule, the perineum is not affected during the first stage and we mention analgesia only to endorse it highly for the relief of the excruciating pain characteristic of this stage, and for its relaxing effect on the pelvic floor and other structures during the second stage. Another good reason for its use is that usually the patient is rendered incapable of bearing down during the first stage, especially early, when there is but little dilatation. In my opinion efforts to hasten completion of the first stage by bearing down are not only useless but positively harmful. Dilation, except where almost complete, is work for the uterus and the uterus alone. To supplement such normal function by straining, exhausts the mother both mentally and physically. It also is responsible for many of the resultant cystoceles and rectoceles diagnosed at later examination, as well as causing at least some of the cervical lacerations.

When the presenting part has begun of labor, all patients receive a cleansing soapsuds enema. As a result the danger from fecal contamination is minimized and pressure of the fetal head on the filled rectum is obviated.

As soon as the presenting part has begun its descent to near the pelvic floor and before there is perineal bulging, the bladder is catheterized. We all know that a full bladder during delivery is not a desirable condition. If very full, the counter pressure exerted may even delay the progress of the presenting part so that it advances only at the expense of

*Read before the West Virginia Society of Obstetricians and Gynecologists at Fairmont on June 11, 1936.

possible permanent damage to the urethra which is pulled backwards and upwards from its attachment. Occasionally postpartum relaxation of the bladder sphincter is an aftermath.

The next prophylactic measure advocated is an early episiotomy. I have always maintained that, with but few exceptions, an average size vaginal outlet will not permit the passage of the average size fetal head of today without distinct damage to the perineal floor structures. When first confining my work to obstetrics fourteen years ago, it was a happy feeling to be able to tell the family that no laceration was found after delivery. Imagine my surprise when seven weeks later at the first postpartum examination, a markedly relaxed perineal floor with resultant poor pelvic support was diagnosed. Some of those cases later had their round ligaments shortened and the floor repaired by a surgeon.

After several such experiences, episiotomies were done routinely on primipara and on repaired perineums. The results since then have been so uniformly successful and so pleasing, even to the eye, that it is still routine.

As to the type of episiotomy to be employed, decision is a matter of judgment and the attendant conditions in each individual case. In the presence of a perineum of good length, and if the head is not too large, median episiotomy is the method of choice. With straight Mayo scissors an incision is made in the median raphe about one-half of the distance to the anus. When pressure from the presenting part bulges the perineum, and it is considered necessary, the incision can be extended. If it is realized that the presenting part is larger than it was originally thought to be, the median can then be converted into a mesiolateral by merely extending the original straight incision to the right or left as desired, thus preserving the sphincter and the rectal mucous membrane. Advantages of the median type are several. It is much easier to repair, the scar is discernible only by looking for it, and the patient is appreciably more comfortable during healing. The one advantage of the lateral type is that the danger of incurring a complete laceration is nothing and therefore much safer. Another justification for performing episiotomies is that the urethra, so much exposed to damage and so poorly supported in its bed of fat and loose tissue, receives less pressure from the passing head and therefore less likelihood to damage.

Another measure to be recommended is the use of prophylactic forceps for actual delivery. How often do we see the presenting head remain on the perineal floor interminably waiting for that slight change to bring it through the vulvar gates, when all that is needed is an application of low (or perineal) forceps with slight traction exerted. Such a procedure accomplishes a safe delivery quickly, easily and entirely under the control of the obstetrician since only one hand is needed for the forceps thereby permitting the use of the unengaged hand for properly supporting the perineum. As soon as the presenting head is engaged in the vulvar opening, the blades may be removed if desired and manual delivery accomplished, or the blades may be left in place and delivery done with the forceps.

It is generally believed that the presenting head is responsible for most lacerations. In my opinion and experience, the shoulders are more often the cause of both original lacerations and the extension of an episiotomy. Consequently, they should be delivered slowly and successively, the one to be brought through first being that shoulder, anterior or posterior, which can be delivered more easily. After the shoulders are delivered, there is but little to be feared from damage by the after-coming soft parts so that as soon as the cord has been cut and the baby laid aside in good condition, careful examination and inspection of the genital tract is necessary. The gloved hand, with its sensitivity of contact, reveals the damage done and this can be checked accurately only with a speculum and complete exposure, a procedure too often neglected.

When an episiotomy has been done, the nurse immediately prepares the instruments necessary for repair. This can always be done with suture materials, needles, needle holder, thumb forceps, scissors and sponges. The hand, in most cases, makes an excellent speculum. Cervical repairs are made at the time of delivery only if gross enough to be easily distinguished as such and if there is danger of subsequent hemorrhage. An inspection of the cervix about the fifth day readily discloses any damage that should be further repaired.

Perineal repair should be painstakingly done. There is no brief in good obstetrics for a repair consisting of a deep bite from one side of the perineum passing back through the deeper tissues to emerge on to the skin on the other side of the lacerated skin and tied. This method may give a good result, but probably will not be so good as it should be. Due care should be exercised to replace all severed tissue in perfect apposition, to obliterate all wound spaces, and to obviate all raw surfaces. The fewest number possible of buried suture knots should be left and tension on the wounded tissue avoided. This is probably the most frequent cause of broken down repair work.

The technique of actual repair is quite simple and requires but little time. Throughout the entire operation, No. 2 chromic 20-day suture has proved entirely successful and silk worm gut is not even to be found in the delivery table set-up. As soon as the birth canal has been carefully inspected, the vagina and damaged surfaces are cleansed with lysol solution, care being taken to remove all protruding amniotic membranes and vernix caseosa from the field. An abdominal pack, moist with lysol solution, is then placed deep in the vagina. The first suture is placed deep in the posterior angle of the wound tissue and tied, the end being left about six inches long and secured up and out of the way with a hemostat. A continuous suture is then employed for the full length of the incision or laceration to bring all tissues into apposition. The last bite is subcuticular at the skin margins and the suture is then carried up and again placed subcuticularly. It is then carried straight back subcuticularly to the knot originally tied in the posterior lower angle of the cut area and tied to the end which has been held by the hemostat. When the first row of sutures reaches the sphincter a deep bite is taken, whether the sphincter is exposed or not, for the purpose of taking up any slack and to further dispose of any wound space present. The suture end held by the hemostat may be used as a tractor if desired. Care is taken throughout the entire procedure to approximate only, thus avoiding tension and allowing for a certain amount of tissue swelling.

This method of repair offers several advantages. With the exception of the one knot, all suture material is buried; all wound spaces are obliterated; the stretched sphincter is pulled up and tightened; the perineal skin surface and the vaginal mucosa are closed subcuticularly, thus avoiding the wick-like action of exposed sutures to infection and adding to the comfort of the patient by not presenting knots and suture ends to catch in perineal pads and exert a painful pull. A number of years ago it was routine in my practice to use skin clips on the perineal skin surface for a day or two, but they were so uncomfortable that they are not used except occasionally and then only when an extensive lateral episiotomy has been done.

In repairing a complete laceration, the torn rectal mucosa is identified, slightly stretched by grasping with Allis forceps the torn corners of the external ends, and repaired with circumcision suture (00), the suture being continuous and everting the edges from the posterior end of the laceration to the mucocutaneous margin. The torn sphincters are then brought together with Allis forceps and two interrupted sutures placed. The repair of the perineal floor is then accomplished with the same technique described above for episiotomies or lacerations less extensive than complete.

Postoperative care of less than complete

lacerations consists of fresh perineal pads after each defecation, each urination, and more often if deemed necessary, each change being accompanied by an external douche of warm lysol solution. Diet is the usual one given obstetrical patients after delivery.

Care of the completely lacerated perineum is the same as above as regards douches and pads. No laxatives, enemas, or rectal tubes are used for seven days. Diet is restricted to fruit juices and other liquids, including small quantities of skimmed milk. Paregoric or morphia are used for a two-fold purpose—to allay pain and to prevent bowel movements. On the morning of the fourth day mineral oil is ordered, one ounce three times daily and this is continued in smaller doses throughout the hospital stay. On the seventh day one ounce of castor oil is given, the patient being instructed not to bear down or to strain and warned to not be disappointed if no bowel control is evidenced at the first movement, or even at the second movement. In any event, she can be assured that she will have normal control by the sixth day.

For the pain and soreness always present after perineal repair, three hourly doses of thirty minutes each with an infra-red light gives immense relief and a lamp is kept on the floor at all times for that purpose.

This subject has been held to a brief with the desire that discussion will be liberal. I do not feel that my method of handling perineums is the best of all methods. Rather it is a resumé of a basic technique started years ago and, I believe, improved from time to time as observation, experience, good fortune and misfortune, guided me along better paths. Many of you undoubtedly have a technique which gives better results in your hands. Since the object of our organization is to exchange ideas and to improve our practice of obstetrics, I want to adopt those points of technique just as I hope you will adopt any points I have brought out that will improve your methods.

ELECTROTHERAPY IN ENDOCERVICITIS*

(Report of a Series of Cases)

By A. Morgan Dearman, M. D.
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During the last decade no branch of medicine has progressed to the extent that has been evidenced in medical gynecology. Endocrinology and vitamins have replaced many previous nostrums handed down from the Stone Age and in many cases are reducing the frequent use of the scapel and must be considered before using a curette. Uterine dilators are less in demand.

With this advancement of science the douche, tampon and vaginal suppositories are relegated to the day of the horse and buggy. Few permanent results have been obtained and they are now being replaced by more effective methods. Recently a few articles have appeared in medical literature condemning the douche. Granted it has a cleansing action, giving the patient a sense of relief, yet we must admit it could not penetrate to the source of the infection and is no more useful than tincture of iodine to an unincised boil or carbuncle. Certainly, especially in acute infections, there is a chance of spreading the infection as now often carelessly given with excess pressure, more particularly with bulb syringes which may give pressure sufficient to force fluid, preceded by pus through the tubes into the abdomen. Many acutely infected cases might have been better treated by rest in bed in Fowler's position.

Electrical modalities in pelvic infections have replaced former medical and surgical

*Read before the West Virginia Society of Obstetricians and Gynecologists at Fairmont on June 11, 1936.

methods with unquestionably better results in many conditions. The most recent, the Kettering hypertherm, appears as a possible specific in gonococcal infections. Tovey's ionization treatment is to be considered. Personally, and after considerable experience, for the acute pelvis I would depend on the Elliott treatment before and after drainage of any abscess that could be reached extraperitoneally or through the culdesac.

Chronic endocervicitis is stated to exist, by various authors, in from 40 to 80 per cent postpartum patients; 80 to 90 per cent are said to have leukorrhea all of which I classify as endocervicitis. A large number, many nonspecific, occur in the multiparous. No estimate of percentage is available in literature. It is conceded that many of these later develop carcinoma. Multiparæ are also subject to carcinoma of the cervix and breast in very close percentage, if one considered the small number without offspring at the age of forty-five. Perhaps trauma and lacerations are overestimated and infections or other causes unknown, are media for cancer. A study is not available of multiparæ at climacteric and multiparæ at like age in ratio to number and the incidence of carcinoma of breast or genitalia.

Regardless of the probable cause of pelvic malignancies, endocervicitis creates a disagreeable discharge and no doubt is the original source of infection in practically all pelvic infections. To remove a tube and leave a diseased cervix is to invite another operation. From this we might infer that no pelvic examination is complete or no pelvic operation should be done, without inspection of the cervix with speculum.

It is my custom to treat a diseased cervix first and after it is cured if leukorrhea persists, which is about 10 per cent in my experience and 10 to 16 per cent for other writers, look for trichomona, which will then frequently be found. Development of vaginal discharge is so insidious that almost half of the patients say they have no discharge, yet after treatment practically all will admit there is less than before the birth of the first baby, now five to twenty-five years of age.

Chronic endocervicitis is variously described as an erosion or an ulceration, but any red cervix is abnormal. Many present granulated tissue which may be considered as a benign neoplasm which will not disappear spontaneously or after surface medication. Nothing except destruction is curative. Surgery except for expense and an occasional mortality is curative. Yet Tomkins in reporting 296 operations upon the cervix reported two later malignancies compared to 228 cases treated by cautery without a malignancy. Each series was a follow-up of eight years.

Dr. Mock in a report of the Council on Physical Therapy states that electrosurgery is no longer experimental but is rapidly becoming the procedure of choice. The electric cautery was introduced by Byrne in 1892. Hunner in 1906 used it in treatment of the cervix.

Other methods of destruction of this granulation and deep infection of the racemose glands besides the cautery is electrocoagulation and electroresection by Hyams' technique. I am of the opinion that each of these methods properly used is successful, although I am personally in favor of electrocoagulation by the cherry applicator. By this method coagulation of the cervical canal is uniform. If coagulation is sufficient, all diseased glands and tissue will be shed as is accomplished by the Sturmdorf operation or Hyams' resection and perhaps at a more even amount. Similar results could likely be obtained with a little greater skill with the cautery. The chief criticism of the cautery has been the occurrence of cervical stenosis as is possible with coagulation or even with extensive surgical repair. Stenosis from cautery or coagulation is the result of too extensive a use and is a fault of judgment, as may be met with in any other field of medicine. This stenosis is easily relieved by dilation which may usually be done at the office. Another frequent objection is sealed infection between scars of linear cauterization. This again would be bad tech-

nique, through not enough or close enough lines. Heat is likely so intense as to destroy infection but if the foci are not destroyed this would probably break through and the endocervicitis would recur and again leukorrhea would be a distressing symptom.

All writers report later pregnancies and normal labors. Perhaps the percentage of pregnancies is somewhat smaller as most are now ready for prophylaxis. Tomkins report that in eight years, one-half of the multiparas later conceived. He failed to state how many of this number previous to treatment may have been sterile or slow to get pregnant.

H. O. Magid reports a case of complete stenosis without menses from cautery. This would appear as an unnecessary complication as naturally all these cases should be followed and if there is evidence of delayed menses with pain, dilatation should be done at once before a large hemotomata would develop. After extensive cautery and all canal coagulations, a coagulum is formed. It is replaced by granulation in two weeks and epithelization in four to six weeks. The erosion or ulceration with the new formation of gland tissue is gone and the hypertrophied cervix is usually shrunk. I have found no cervix that would not completely heal and stay normal in appearance. About five per cent stay larger than normal. Surely such an approach to nature will lessen future malignancies and prevent spreading of this infection to adjacent pelvic viscera and to the renal pelvis.

Some writers have claimed that the cervix does not produce pelvic pain. One only has to do a gentle dilatation of a cervix in a gravid or non-gravid woman to doubt seriously this assertion. In my cases one-fifth report immediate relief of pelvic distress and almost half report relief within six weeks. The remainder likely have other pelvic conditions.

Coagulation of the tubes has been reported. Few may master this procedure which appears to me to be too blind surgery unless guided by the flouroscope and even then it would appear to take too great a chance on an acute pelvic infection.

R. I. Hillar has reported acute pelvic infection following electrocoagulation of the cervix with one death and another patient very ill. He also states that he is aware of two deaths from cauterization. Connell and Douglas report three cases of acute pelvic infection following cauterization of the cervix. These cases are open to criticism, Case No. 1 was also curetted which has always carried a higher percentage of postoperative infections than cauterizations. Cases Nos. 2 and 3 were cauterized and a Smith-Hodge pessary inserted at the time. It seems possible that this foreign body adjacent to an open surface which follows cauterization may have been a factor.

These seven cases, five following cautery are the only serious complications reported.

There are 5,028 cases reported as follows:

Cautery	
Crossen	80
P. Tomkins	228
H. B. Mathews	281
Baker and Miles	80
T. W. Adams	116
F. C. Holden	168
Masson and Parsons	550
L. Braun	100
A. B. Shaw	93
A. M. Dearman (this paper)	104
Total	1800
Electrocoagulation	
C. O. Cherry	800
Harriman	200
Ende	200
W. E. Grand	300
R. L. Barrett	120
Arenas and Emanuel	300
H. E. Kimble	200
B. Notes	50
A. M. Dearman (this paper)	269
Total	2419
Electroresection	
M. N. Hyams	779
R. B. Walker	30
Total	809

Many authors give indefinite reports not here included as Robbles several hundred. These 5,028 cases are specific cases without a serious complication. It is possible that the cautery and electric treatment has now been used one million times in the United States and with this large usage there would be complications. Accidents from cars and trains seem as great, yet we use them. Nothing can approach the result except amputation or Sturmdorf operation. Is there a report of 5,000 of these operations without a death or a serious complication? These casualties should be reported but their proper risk should be evaluated.

As previously stated, I have used the cherry treatment on 269 cases. Only twice was it necessary to repeat the treatment for complete healing of evidence of endocervicitis. Cauterization was used on 71 patients requiring a repeated treatment 33 times, making a total of 104 cauterizations. All coagulation treatments were given within the last two and one-half years. Seven have since become pregnant. Two have been delivered with no evidence of dystocia. One case of unrecognized pregnancy was undisturbed.

Should an acute pelvis develop following cauterization or electrocoagulation it should be treated as any acute pelvis such as follow abortions or deliveries. My preference would be the Elliott treatment, with no rush to open the abdomen and if abscess formed, drainage if possible by posterior vaginal section or Cullen's method. It should be remembered also that some of these infrequent complications may have already begun before treatment and partly was the means of bringing the patient to treatment.

There is one variation in my later care of the patients from other reports I have studied. I instruct them to wash frequently but to take no douches. I have had no severe hemorrhage, but there were more mild hemorrhages. I instruct them to return each week for two weeks and every two weeks twice more. I make no effort to remove the coagulum but dilate the canal with a very small applicator with tincture of iodine. Before the first treatment I cleanse the cervix with an antiseptic and use 15 per cent cocaine. Treatment is somewhat painful but lasts only about one-half minute total time.

Ideal results with cautery require greater skill than with the cherry treatment. We may assume that stenosis is due to overcauterization into muscle and recurring endocervicitis is due to under a cauterization which does not reach the diseased glandular tissues. Necessity for the second treatment in one-third of my cases compared to one in 75 by cherry method is an illustration. Treatment of the cervical canal to within one-eighth inch of the internals is necessary for cure. This is more difficult when accomplished with the cautery. In my cherry cases there were two cases of mild cervical stenosis easily relieved by one dilatation at the office.

Conclusions: (1) Electrocoagulation is the treatment of choice for benign chronic endocervicitis. Hyams' method is preferable if biopsy is desired.

(2) Reports of occasional catastrophies must be considered in proportion to the large number of patients treated.

UNTREATED CANCER

"Cancer may begin at any age, although the majority of cases occur during the middle and later periods of life," according to Dr. George Gay Ward who writes on "What You Should Know About Cancer" in the September *Hygeia.*

If the condition is untreated the duration of life averages from eighteen months to two or three years. It is not contagious and is not a blood disease; therefore it is not communicated from one person to another. There is no recorded case in which cancer has developed from contact.

In cancer the influence of heredity in human beings has not been proved and is so remote that it may be disregarded. Its inception is in a small localized area, and it is curable if treated early before the disease has time to spread into inaccessible parts.

Cancer is insidious in its onset. The early symptoms are not alarming. Unfortunately, pain is not an early symptom. If it were, many would seek relief promptly and would be cured.

LYMPHOGRANULOMA VENEREUM*

By A. P. HUDGINS, M. D.
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LYMPHOGRANULOMA VENEREUM (also called the sixth venereal disease, lymphopathia venereum, lymphogranuloma inguinale, Nicolas-Favre disease, and climatic bubo) is a venereal disease involving the lymph vessels and nodes about the inguinal areas, the perineum, rectum, and sacroperirectal regions. Because of this lymphatic involvement with resulting stasis, at times there is a cutaneous and subcutaneous induration and thickening of the parts which appears deep-seated. While this infection has been called the "fourth", Stannus classified it as the "sixth venereal disease" naming in order, syphilis, gonorrhea, chancroid, genital infection with Vincent's organism and granuloma inguinale.

Etiology: Lymphogranuloma venereum is more common in the tropical regions and was thought for a while to be found there exclusively. The disease is found more commonly in the negro race and is seen in the female more frequently than in the male. It is usually considered a disease of adults, but Elitzah and Kornblith reported a case of infection in a child. It is definitely considered to be a venereal disease and rectal lesions occur in the male from sodomy.

The etiological organism has not been isolated but is thought to be a filterable veries. It is not uncommon to find a positive or questionable Wassermann reaction associated.

Symptomatology: About three days to three weeks after exposure the initial lesion develops on the genitalia. It is a fleeting sore lasting only a few days and not always discovered. Four types of primary lesions are usually described, the nodular, papular, ulcerative or a urethritis. Some investigators mention the vesicular type, resembling herpes which is not included in the above classification. The lesions vary in size from a pin head to a pea and heal without scars. The site is the glans penis or the prepuce in the male and in the female the external genitalia, vaginal canal or cervix. About two weeks after the initial lesion appears the regional lymph glands become enlarged. These are the inguinal glands in every case in the male but in the female the inguinal glands are involved only when the lesion is on the vulva or lower vaginal canal. If it is up within the vaginal canal or on the cervix the lymph vessels drain to the nodes in the sacral region and are thus not demonstrable clinically. For this reason it can be seen that the infection can be of long standing and may progress to late manifestations before it can be clinically noted.

The glands are firm and inflammatory in nature at first. In the inguinal region the skin over the glands becomes bluish or dark and later the enlarged glands fluctuate and break down forming multiple sluggish, indolent, painless ulcers and sinuses which are very slow in healing. This stage is often associated with general systemic manifestations, fever, chills, headache, sweats, joint and muscle pains, abdominal disturbances, weakness and even prostration.

If, however, the initial lesion in the female has been up within the vaginal canal and has healed unnoticed, but in its wake there remains the undiscovered foci in the perirectal and sacral lymph glands the first noticeable symptoms may be gastrointestinal, due to a rectal stricture. Months or years may elapse between the initial lesion and the stricture of the terminal bowel. The complaint may be constipation, pain in the rectum, or a purulent rectal discharge.

The patient's complaint then may be re-

*Read before the West Virginia Obstetrical and Gynecological Society. First Annual Meeting, Fairmont, West Virginia, June 11, 1936.

ferable to the inguinal glands, the rectum or the genitalia. In the latter location it may be a herpes or papular lesion or a thickening of the skin of the part.

Extragenital lesions may occur from unnatural sex exposure. They are found on the tongue at times with involvement of the cervical glands. The rectal lesions in the male are also from abnormal sexual exposure.

The lesions are usually described as painless which gives a false impression. The lymphadenitis of the inguinal region is usually free from pain. But when the rectal stricture forms, the patients are miserable, complaining of pains in the back, rectum, and legs. They not infrequently speak of suicide as a relief.

Physical Findings: The initial lesion clears up within a short time without any treatment, hence it is seldom found. When seen it is not pathognomonic, appearing as a vesicle or as a urethritis. There are no tests, either histological or bacteriological, which will help in the diagnosis at this stage.

The appearance of the chronic multiple draining sinuses from the inguinal glands, painless, indurated, with the bluish appearance of the adherent overlying skin is of definite diagnostic value. The skin lesions are not superficial, they are deep infiltrations with sinuses from the lymph glands.

The skin induration which is at times associated, is a peculiar thickening about the genitalia and anal region without ulceration. This is thought to be due to lymph stasis and is caused by scar tissue formation blocking the lymphatics. This may progress to a form of elephantiasis.

The rectal stricture is found usually less than six cm. within the anal canal. It is comparatively smooth, firm, annular, fibrous, not friable and not fixed to the surrounding structures as a malignancy would be. The lumen is constricted so that it barely admits the examining finger. The lesion is usually painful but does not bleed easily.

Secondary infection about the rectum resulting from the stricture may of course complicate the picture.

None of the laboratory findings are diagnostic except the intradermal injection of the Frei antigen.

Diagnosis: The inguinal lesions, characteristically painless and chronic, with multiple sinuses are suspicious. The rectal stricture is rather typical and diagnostic, smooth, fibrous, firm, within six cm. of anal sphincter, not friable, not bleeding easily. There are no histological findings that are diagnostic. The tissue diagnosis returns, "inflammatory tissue" or "granulation tissue."

Frei in 1925 published an article describing a method of diagnosis by intradermal injection of Frei antigen, administered and read similar to the tuberculin test technique. The antigen is obtained and prepared as follows: An uncomplicated case of lymphogranuloma venereum is watched, observing the inguinal glands as they develop and become fluctuant. Before they break through the pus is aspirated aseptically and treated in the water bath at 60° C. for three hours. The following day incubation is done an additional hour at 30°. Some workers recommend heating on three successive days. It is then cultured to assure sterility.

Following this, tests are made to ascertain whether the reaction is specific—no reddening in an uninfected individual and a reaction of one-half centimeter or more of reddened induration in a definitely established case. The additional safeguard is usually followed to test the antigen also on cases of granuloma inguinale, Neisserian and luetic infection to make sure that these do not react.

Tamura has described a special technique for cultivation of the virus for diagnosis and treatment.

Intracutaneous injection of 0.1 cc. Frei antigen is made on the flexor surface of the forearm and is read in 48 to 72 hours after injection. A control of physiological salt solution is also used. An infiltration of 0.5 cm. in diameter is diagnostic. At times the reaction is so severe that it may cause local

necrosis. As a rule the test is positive 10 to 21 days following the appearance of the adenitis, during which time an allergic state has developed.

Coutts believes that there are two definite types of the virus: One type of genital and the other of buccal origin. This latter type manifests itself with general symptoms, and there are also two types of antigen so that one type will not react in a case in which the other type of virus is responsible for the disease. This concept of two distinct viruses will have to be substantiated by further experimental and clinical observation.

X-ray examination of the lower bowel gives a picture that is at times diagnostic. When there is a stricture of the rectum, obstruction is shown differing in degrees of infiltration which would be shown in a malignant involvement.

The differential diagnosis must be made between:

(1) Granuloma inguinale: In this infection the lesion is superficial on the skin. The ulcer spreads slowly over the inguinal area, thigh and abdomen. The diagnostic Donovan bodies in mononuclear cells are to be found. No rectal stricture result from this infection.

(2) Luetic lesions about the vulva and in the rectum must be differentiated. The Wassermann or history of lues would help but should not be too rigidly relied upon as lues is often found complicating lymphogranuloma venereum. Unquestionably a number of rectal strictures have been called luetic when a constriction has been found in an individual with a positive Wassermann. Luetic glands are usually discrete, shotty, movable, not tender and do not break down.

(3) Malignant growths of the rectum and genitalia are found chiefly in elderly individuals. The lesion presents a somewhat different picture. Cancer of the rectum is usually bulky, friable, with induration about the lumen causing fixation. Lymphogranuloma venereum presents a circular constriction like a camera shutter, comparatively thin, not bleeding easily. The induration about the vulva in malignancy is, as a rule, centered about an obvious ulcer with necrosis. Lymphogranuloma venereum gives a general subcutaneous thickening extending over the vulva, even up into the vagina and about the rectum. A biopsy will of course be diagnostic of malignancy.

(4) In chancroidal infection the adenitis is more acute, rapid, painful and breaks down with one central necrotic area with a single discharging sinus. In lymphogranuloma venerum there are multiple sinuses. At the time of the adenitis there are usually several chancroidal ulcers present on the skin of the genitalia in which the bacillus of Ducrey can be found. There is a test, (Ito-Reenstierna reaction) which has been used with some success in this disease.

Other conditions which must be ruled out when there is adenopathy in the inguinal region are: pyogenic infections, metastatic glands from a malignancy, lymphosarcoma and Hodgkin's disease, chronic glanders, tularemia, tuberculosis, herpes genitalis, actinomycosis, lymphatic leukemia.

Esthiomene, a condition in the female characterized by ulceration, and elephantiasis of the vulva and perianal region, the "anorectal syphiloma" syndrome, and definite rectal stricture, which formerly were attributed to syphilis, gonorrhea, and other granulomas, especially tuberculosis, have been proven in many cases to be due to lymphogranuloma venereum.

Complications: If the rectal stricture continues, intestinal obstruction results. This, of course, requires treatment as obstruction from any other cause would. When colostomy is performed the opening tends to become constricted more rapidly perhaps than is seen in other conditions requiring an artificial anus.

Secondary infection with vaginal or rectal discharge often results and requires special attention and treatment for the relief of its aggravating symptoms.

Contrary to the usual opinion pain becomes such a prominent symptom that it must be

treated as an entity. It at times reaches the point of causing suicidal attempts.

Treatment: Prophylaxis: The disease is venereal in nature and prophylactic measures are important.

A long list of methods have been tried and many abandoned.

Some recommend complete surgical removal of the glands before fistula formation develops. This of itself would not seem to be an effective method because the infection spreads through the subcutaneous structures and lymph channels and removal of glands, even a block dissection would not completely remove the diseased tissue, especially since the retrovaginal and sacral group of glands are often involved and perhaps harbor the organisms.

Graduated doses of Frei antigen has been tried but the results are not encouraging.

Fifty cc. of blood from a cured case, sodium salicylate, iodide intravenously, and x-rays have been tried but here too results have been disappointing.

One large clinic where a number of these cases are treated is using colostomy immediately to get the fecal contamination away from the rectum and perineum, and no other treatment. It is claimed that after 18 to 24 months the colostomy can be closed in certain cases.

One per cent of tartar emetic intravenously starting with a three cc. dose and increasing one cc. each treatment up to 10 cc., given every three days has proven most successful if continued over a period of six to 12 months or even more. Discouraging results have been reported with this drug due at least in part to the fact that the treatments were inadequate, either in dosage or in number. Usually the history is given that the injections were received for a few weeks or months, no improvement was noted and they were discontinued, either by the patient or the doctor, or perhaps antiluetic treatment was given a short time and tartar emetic for a while.

Any toxic signs resulting from the administration of tartar emetic is of course a sign to leave off one dose or to continue at smaller dosages. The symptoms to be looked for are dizziness, cough, vomiting, diarrhea, aching in back and shoulders, and toxic deafness. Treatment is to reduce or stop the administration and whiskey one-half to one ounce t. i. d. seems to be of value at times.

Fuadin, antimony thioglycollamide, neostibosan are preparations offered as substitutes for antimony and potassium tartrate which are claimed to have the advantage of greater tolerance and less irritation on intramuscular injection.

Prognosis: Recovery is slow but persistence and care in treatment is rewarded.

Pathology: The pathological reports are concerned chiefly with the morbid anatomy found about the inguinal region. Grossly the glands present a mass bound together by thick perinodal exudation often attached to the skin. On sectioning multiple small abscesses are seen which contain thick creamy pus.

Histologically the lymph nodes present a definite granuloma replacing the normal lymph node structure, in which are found numerous microscopic abscesses often stellate in shape and filled with lymphocytes and cellular debris. These abscesses are walled off by epitheloid cells which are often in palisade arrangement. Plasma cells and leucocytes are seen and occasionally giant cells of the Langerhans type. This picture is thought by some workers to be specific of the disease. The concensus of opinion, however, is that no definite diagnosis can be made from histological study.

There is no evidence to show that there are any pathological changes in other parts of the body than about the genitalia, regional lymph nodes and rectum, except in cases of extragenital infection.

CASE REPORT

This case is being reported in detail because it typifies several noteworthy facts.

First: The chronicity of the disease, with prolonged treatment often under a mistaken diagnosis.

Second: The prominence of pain as a symptom demands that it be treated independent of the other

therapeutic measures. This is of course not an easy problem to be solved in marked pain of a chronic nature. The literature does not mention the distressing symptom and it is overlooked as a rule in theoretically considering the disease.

Third: No symptoms were noticed in this case until the patient presented herself for a rectal complaint. A careful history and physical examination failed to reveal any involvement referable to the inguinal glands.

A. F., 23 year old negress, nurse maid, presented herself with chief complaint of rectal discharge, with fecal incontinence, (eight months) pain in rectum, back, and legs (eight months.)

Present Illness: The first trouble noticed was a rectal discharge in 1930. A diagnosis of rectal fistula was made and an operation was performed in 1931 for its correction but no improvement was noted. The patient presented herself again for treatment in 1934 and had a rectal dilatation.

About March, 1935, she first reported fecal incontinence and pain about the rectum and in her legs. She had taken large doses of paregoric and as much as a half-pint of whiskey a day for relief of pain. This pain had been so severe at times that the patient had attempted suicide.

Her Wassermann has been positive and she has received neosalvarsan (over 28 treatments) and bismuth (8) irregularly over a period of two years with some general improvement according to her report.

P. H.: She has been healthy all of her life until onset of present illness with no serious illnesses reported except lues with treatment as noted in present illness.

Operations: 1931 for rectal fistula; 1934 for rectal dilatation.

Family: Father died at 52 of heart disease; mother, 48, living and well; brothers, 4, living and well; sisters, 4, one living and well, three dead—suicide, accident, and in infancy, respectively.

Physical Examination: Fairly well developed and nourished negress. Head and neck, no gross pathology. Lungs clear. Heart, regular; quality, good; no murmurs. B. P. 105/65. Breasts, normal size; no masses.

Abdomen: Flat, no masses, no tenderness, no scars. The inguinal glands were small, nodular, movable with no evidence of periadenitis and no evidence of sinus scars.

Genitalia: There was some thickening of the tissues, anterior to the rectum and the posterior vulva. Two finger introitus with nulliparous appearing cervix which was in anterior position, firm in consistency.

The uterus was two degrees retroverted, firm, perhaps slightly enlarged with limited movement. There were no masses made out in the adenoxa, but there was tenderness.

Rectum: There was an operative scar on the side from the left buttock extending medially through the sphincter. There was thickening about the scar and the rectal tissues. Fecal incontinence was evident. The examining finger encountered a constriction about one and one-half inches within the rectum, annular, smooth, with only a small opening at approximately its central portion not admitting tip of examining finger. The stricture was firm, somewhat elastic, not nodular, not cauliflower and not hard.

Extremities: There was no edema, and no varicosities were noted.

Clinical Laboratory: Urinalysis, negative; blood, hemoglobin, 90; leukocytes, 10,000; differential polynuclear, 80 per cent; lymphs, 16 per cent; mononuclear, four per cent; Wassermann, blood, one plus.

The Frei test was made and read 48 hours and four days after injection. The control (physiologic saline) showed no infiltration or reddening while the antigen showed an elevated, reddened area about one cm. in diameter with some tenderness.

A second Frei test was done on the other arm using antigen received from another source. This area of reddening was also above one cm.

A biopsy report was returned, "granuloma."

The pain was so severe that on November 27, 1935, a sacral block was done with the hope of its relief. Thirty cc. of one per cent novocaine with 10 cc. of absolute alcohol was injected into the sacral canal. This usually gives some anesthesia to a saddle-shaped area for a variable time, from several week to three months. In this case the relief was not noted.

A frank fluctuating rectal abscess complicated this case and required incision for adequate drainage. Excision of the fistulous tract may be required later.

This patient is still under treatment which has consisted of tartar emetic, bismuth, and ultra short wave diathermy. Due to the type of patient, the treatment has not been satisfactory because of the irregularity of visits.

There has been marked improvement symptom-

atically. The pain and discomfort have been markedly decreased and the general outlook on life is more optimistic. There has been a moderate gain in weight.

The incontinence and rectal discharge are still present and are due to associated, complicating conditions caused by distinct anatomical changes requiring definite treatment independent of other therapy.

Conclusion: 1. Pain is often an important symptom in lymphogranuloma venereum when rectal involvement is present.

2. The rectal lesion is often the first indication of the disease. No evidence of inguinal node involvement can be made out.

3. A case report presented.

FORTY YEARS OF OBSTETRICS*

By C. H. MAXWELL, M. D.
Morgantown, W. Va.

FORTY YEARS OF OBSTETRICS! That has been my lot. That has been my good fortune. That has been what has buoyed me up in the hard struggles of the general practitioner. That has been the solace in the long weary hours at the obstetrical bedside to see the mother come through safe and sound. Twenty-five hundred consecutive cases without a maternal death and no maternal infection. Then came a fatal postpartum hemorrhage due to overconfidence in my work. A placenta marginalis, with dangerous hemorrhage was stopped promptly with pituitrin after delivery. Medicine was left to be given in an hour, which was done, but was vomited. This started the fatal hemorrhage, and she was gasping her last when I got to the bedside an hour later. She left six children in dire poverty.

If I had not had twenty-five hundred consecutive non-fatal cases I would have stayed with the patient an extra hour or two, but I depended on the remedies that had worked for thirty years without failure, but overconfidence due to long experience was my downfall. "Let him that thinketh he standeth take heed lest he fall."

In consultation with a fellow physician in another case, we gave the mother pituitrin. This colored woman had called in "the mine doctor" but she was so offensively abusive that the doctor refused to stay on the job. Another doctor was called. She tried to run him off. He was not the running kind. He called for me to help him. She tried to chase us both away. She did not succeed. Probably without proper consideration the pituitrin was given. The uterus ruptured. Podalic extraction was hurriedly done, the placenta manually removed, and several feet of the bowel came out through the uterine rent. This was replaced and the vagina packed. The patient was sent to the hospital, and turned over to the charity side. The uterus was repaired, but the patient died a few days later.

I read a paper before one of our county societies in which I said, "Pituitrin is made from the brain of the cow. If it is not mixed with the brain of the doctor it should be left at home." The mixture in this case was not made. Hence the disaster. Yet in this instance the patient lived in abject squalor and want, and doubtless was so badly undernourished that her muscular resistance was entirely too low to resist the heavy demand made on it by the labor, and the superimposed demand made on it by the improperly considered advisability of pituitrin by the two attending phyiscians.

Just within the last year I had to write a death certificate, death occurring during labor. The patient had been a trained nurse, and had had five babies in five years. I had attended her at all the births. She rested from

*Read before the West Virginia Society of Obstetricians and and Gynecologists at Fairmont on June 11, 1936.

births for five years. Then another one was due. She had had partial paralysis of one side and her face and tongue several years. She was extremely fat and suffered from piles. I called on her when labor began. After examining her and finding things apparently normal, I went back to my office with the usual instructions: "Call me when the pains are five minutes apart."

When the five minutes call came I took a trained nurse with me. When we went in she was sitting up in bed, and was screaming like many do. I tut-tutted her, and hurriedly prepared to wash my hands. She stopped making a noise, and her head sank on her chest—dead. I wrote her death certificate: "Death probably due to an embolus from hemorrhoids."

I have written more death certificates probably, than any other doctor in the county, but due to the rigid training I had in bedside obstetrics, and an unabated conscientiousness in following out this teaching, and adding a little to it from reading and experience, my death rate has been less than one-sixteenth of one per cent, thanks to the teaching of Dr. Burns of Denver who is still active in his work. "Put your conscience in the work, and carry out the technique, and the obstetrical work will be one of the most satisfying of the whole line of the general practitioner."

"It is not a theory but a condition that confronts us." Most of the West Virginia doctors do their obstetrics in the home, probably 95 per cent of them. The training the young men get in medical school is not fully suited to the country doctor. If the training presupposed the lying-in would be in the home and the training given accordingly, the city practitioner, and hospital doctor would be benefited thereby, even if he had no special need to use it at the bedside.

Manual and digital dilitation of the uterus and perineum was one of the most rigidly enforced techniques in the training we received. "Use your head and your hand." When the perineum is dense and hard, and the uterus slow in dilating especially after the waters break, there is nothing more satisfactory to the progress of labor. In most cases one had just as well work while he waits. The perineum and vagina can almost invariably be so softened, and stretched that the baby comes through and the perineum is intact, and no repair is needed. The labor can be shortened many minutes and sometimes hours.

Our medical schools fail to emphasize the importance of the anesthetic. They put entirely too much time on major operations and their technique, and pay little attention to the anesthetic. They take it for granted that the anesthetist is a highly trained man and will look out for the patient's best care. If this were always so, it would be good. But our general practitioners have not had proper training in anesthetics. It must be remembered our West Virginia doctors often have to give anesthetics, and cannot send away and get a specialist.

I believe bichloride is the best antiseptic we have. It coagulates albumen and ties up any germs in the coagulam, and they cannot be absorbed and are passed out and are harmless. This is especially true of bruises and lacerations. A moist bichloride dressing is the ideal one. There is not enough absorption to harm the patient. The results are fine.

In getting ready to write this paper, I went to two prominent young general practitioners, and asked them to lend me their notes they made on obstetrics in medical school, so I could get some of the latest teachings on the subject. I was almost dumbfounded to find that neither had taken a note on their obstetrics in medical school. Just why the teachers on obstetrics had not demanded that this be done, cannot be explained unless they just passed it by as "an old granny's job," that it did not need any attention from the young doctors. It is almost criminal in modern times to expect the mother and nature to take care of themselves.

Rectal examination is recommended by some. This does not belong to obstetrics, in spite of the teachings of these men. The perineum cannot be softened and stretched

through the rectum. The uterus cannot be dilated and retracted through the rectum, or the child's head rotated or held in check in precipitate labors. The rectum was intended for something else. The vagina is the natural place for aiding childbirth. The only possible excuse for not manipulating through the vagina is danger of infection. This danger need not be considered, for it is so slight we should not forego the help we can give the mother and child by proper manipulation. It is also known that the natural vaginal secretions are antiseptic as well as aseptic. The antiseptic manipulation adds little to the danger. Those who practice rectal manipulation, and do not touch the vagina have just as many or more infections as does the careful vaginal manipulator. Just why this rectal teaching should be kept up, and manual and external disinfections of the genitalia be disregarded is hard to understand. The involuntary bowel movements during labor furnish abundant lessons in rectal contaminations without smearing one's hands intentionally by rectal manipulations.

Forty years of perfect results in thousands of cases gives assurance that the danger is so slight that it can be entirely ignored. I hope the teachers will again return to teaching the proper manipulation and care of the patient through vaginal technique.

The teacher said to the boy: "How many senses have you?" "I have six." "How's that, I have only five?", said the teacher. "Yes, but you do not have no common sense", said the boy.

If there is any place in life that this sixth sense is needed it is in bedside obstetrics. Without this sixth sense the baby catcher should change his job to something less exacting. Let us demand that this sixth sense be cultivated in our medical courses.

My work has been with all classes from the bum in the mining shack to professors in the university. Probably 90 per cent were laborers and mechanics and farmers. This put me in contact with every grade of humanity, white and black, although my negro babies have been extremely few. The technique has been exactly the same in every normal case. The Prime Minister of France called in the noted Dulafoy to attend him and said: "I do not want you to treat me as you do the vile wretches down in your hospital." This irritated Dulafoy instantly, and he said: "Sir, those people whom you choose to call vile wretches, are all prime ministers in my eyes." So in my work. They are all prime minister's wives. The results have justified the personal care given to them. The doctor who neglects to see that the mother is properly attended to before he leaves the house has failed to do his duty, and doubtless is responsible for the high percentage of infections and deaths of the mothers.

UNDULANT FEVER

Undulant fever is a disease which until recently was denied existence by science; but it has now been recognized as one of the most baffling of illnesses. Dr. Royall M. Calder gives the interesting history of its inception on the isle of Malta and its subsequent transfer and development in America in his article "Undulant Fever: the Plague of Malta" in the September *Hygeia*.

The germ or causative agent was discovered in goat's milk in Malta; these goats were later exported to America where they transmitted the germs to cattle and pigs. Persons who drank milk which remained unclean or had not been pasteurized quite often caught the disease.

The one great obstacle to the recognition of undulant fever has been that its manifestations are extremely varied. Great variation is seen from one patient to another, but certain symptoms are common to almost all. Chief among these is weakness. The victim arises in the morning feeling well and ambitious; but by midmorning he is ready for bed again.

This lassitude gradually increases, and finally he develops an actual aversion to effort of any kind, mental or physical. His appetite fails; his digestion is poor; his head aches intensely and almost constantly; his back may ache, or he may have pains in various joints, suggestive of rheumatism; he loses weight; he becomes nervous and oftentimes a mental depression sets in.

CAESARIAN SECTION*

(With Summarization of One Hundred and Ninety-Seven Cases)

By JAS. R. BLOSS, M. D.
Huntington, W. Va.

AT Atlanta in 1926 I presented a paper before the Section of Obstetrics of the Southern Medical Association. At that time I rather decried the frequency of Caesarian operations and advised, in so many words, that if one knew his obstetrics, fewer would find it necessary to use this method of delivery.

A very heated discussion pro and con is still in progress upon this point. In certain clinics, and in the practice of many of the prominent obstetricians of the country, the rate runs only one or two per cent for Caesarian section as compared to all deliveries. In others it will vary from five to ten per cent.

Ten years of added observation and experience has led me to a change of view in this matter. The mere fact that we are able to deliver a child through the vagina and have both mother and child live, does not mean that we have practiced good obstetrics.

Those of us who have persisted in giving careful and thoughtful postnatal examination and treatment must, of necessity, have become thoroughly dissatisfied with the end results of our efforts. If one happens to have a fairly large gynecologic office consultation experience, he soon realizes that in all probability, physicians rendering obstetric care certainly are not cognizant of the final outcome of forceps deliveries, versions, or, in more instances than is suspected, even slow, long drawn out, so-called normal deliveries.

A thoughtful consideration must certainly convince one that many women are semi-invalids from injuries received at the time of delivery. One must not lose sight of the fact also, that there is a growing suspicion that many of the "mental misfits"—morons, criminals, moral delinquents, et cetera—had microscopic brain cell injuries at birth. The thought may be pertinent that in many of these two classes it would have been far better had a Caesarian delivery been made. I can recall three patients of our own in the past year who should, as I review them, have been better off had they been so delivered. Possibly a few minutes can be spent in discussing the indications to be considered in determining whether or not to make a section delivery.

Usually, in discussions in medical meetings, in text-books and in presentations in journals, authors classify the indications for Caesarian section into the two categories of absolute and relative ones. In many instances this is possible but there will be a large number falling into a border-line classification so to speak.

Of course, there are certain absolute indications for a section. Among these it would be agreed that gross deformities of the bony pelvis are to be considered. All feel that this is probably the most frequent indication for operation. One cannot take a dogmatic stand, however, as to any definite measurements being absolute indications. We frequently find that small pelves are mechanically perfect, in construction, for the work to be accomplished, while others with much larger diameters fail to meet this last criterion and trouble ensues. Not only must we give due consideration to the inlet but equally of importance is our study of the outlet. We feel that a failure to give this proper study is responsible for much maternal morbidity and fetal mortality as well as morbidity. Then we must investigate the inside of the bony pelvis, for unrecognized

*Presented at the Clinical Conference of the Staff of the Chesapeake & Ohio Hospital, Thursday, April 16, 1936, at Huntington, West Virginia.

pelvic injuries in infancy and early childhood, may have a residue of exostoses, irregularities and so on, which are of utmost importance at labor. A faulty inclination of the pelvis or the prominence of the lumbosacral articulation must be recognized. The importance of a careful prenatal survey of the female reproductive plant can be appreciated if one thinks in terms of preparedness.

Next, probably, should be mentioned tumors, which may act to obstruct the descent of the child during labor. In this group fall certain fibroid tumors of the uterus and cystic tumors of the ovary. In my opinion carcinoma of the cervix or of the rectum should be an absolute indication always for delivery by the abdominal route.

Atresia of the cervix and vagina from previous operations, injuries and so forth may, at times, necessitate a section. I have had the experience of adhesions to the uterus of the omentum and other structures, causing such a misdirection of muscular effort that it was impossible for the child to engage in the inlet. This was not detected before the section was done. This patient had been previously delivered per vaginam. Suspension and other pelvic operations or previous inflammatory diseases of the reproductive tract may likewise be etiologic factors of importance.

We feel that in case of placenta prævia, unless the cervix is dilated so that an immediate extraction can be made, a section offers the safest method of handling the situation. There are marginal implantations which may, at times, be handled by bagging with, or without, subsequent version. The decision must depend upon the experience, judgment and skill of the professional attendant. In ablatio placenta, without any, or insufficient, cervical dilatation, a section should always be done, in our opinion, in the interest of the mother.

The toxemias of pregnancy and eclampsia present a problem which may suddenly confront us. The studies upon the toxemias have proven that only in the rarest of instances is it impossible to handle them successfully by other therapeutic procedures. These studies and the appreciation of the importance of prenatal care have reduced the incidence of eclampsia to a minimum and even these can usually be handled by appropriate therapy other than surgical.

There will be an occasional patient whose convulsive seizures seem adamant to other therapy, however. In our opinion it is best to deliver by section in these fulminating and malignant cases. The child may die or be irreparably injured by delay and possibly by the therapeutic measures instituted. We question if the maternal injury is not more grave than is suspected. The necessity for a section because of this complication is becoming less. In the four years (including 1923-1926) I had made five sections for eclampsia. Since 1926, and to the present time, it has only been necessary in six additional cases. We feel very sure that the diminution in the incidence of eclampsia will follow more widely spread prenatal education of both physicians and the laity. More education and prenatal care—less eclampsia!

Maternal conditions of a constitutional character may obtain which necessitate a decision as to whether or not to deliver by the abdominal route. In this group fall heart conditions of an acute or chronic type. Here we should seek the collaboration of a competent cardiologist. We have had several patients who had complications of this type. The question of tuberculosis and kidney complications may demand consideration. Under such circumstances consultation with experienced internists will help in deciding upon the course to pursue. In the last analysis, however, the experience and judgment of the obstetrician will have to be the deciding factor.

Previous sections are a subsequent indication for a repetition of the surgical delivery where the etiological factors are still existant. If these have been removed and there has been careful technique in the closure of the uterine incision, a normal delivery under careful supervision may be undertaken with an expectation of a happy outcome. They

must be watched assiduously, however, for a rupture may occur at the site of the previous uterine incision.

There will arise situations during labor when one must decide upon the necessity for an abdominal delivery when no cause for this procedure can be found. In these instances we will find at operation some previously undetected factor. An example is a short cord about the infant's neck which would not permit descent and the condition of the infant becomes alarming so the section is indicated in the interest of the baby; another due to adhesions rotating the uterus on its long axis; another following a uterine suspension with a subsequent deformity of the anterior wall of the uterus, which prevented a proper direction of the force of the uterine contractions.

I can but hand on to you the advice given to me in a personal communication by the late J. O. Polak, "If you have a normal presentation and position with a cervix dilated or dilatable and there is no progress after two hours of regular, strong uterine contractions, something is wrong and you had better do a section regardless of the measurements." He regarded this as a test of labor. The greater my experience, the more convinced I am that his advice was good.

To date one hundred and ninety-seven sections have been made in our service. All have been done by the so-called "classical" technique with the exception of one in which a hysterectomy followed the delivery of the infant. The low section and the type called extraperitoneal have not appealed to us as having especial advantages which offered greater security.

There have been five deaths. The sixth, fourteenth, twenty-sixth, one hundred and seventy-sixth and one hundred and ninety-second.

The first fatality followed a section done because of a deformed pelvis. This patient was an asthmatic who developed pneumonia on the third day after the section and died on the fifth day from an acute cardiac dilatation. The second death was also in a case where operation was performed because of a deformed pelvis. She developed paralytic illeus on the third day and died on the fourth day in spite of an enterostomy. The third death was that of a woman whose section was done because of a deformity of the pelvis. This patient had pyelitis and died on the third day postoperative from paralytic illeus. The fourth death was that of a patient who had a previous Caesarian section because of a deformed pelvis. This patient was sent into the hospital with a rupture of the uterus at the site of the scar of the previous section. The patient's condition was so critical at the time of operation that no attempt was made to remove all of the extravasated blood from the abdomen. At postmortem a large amount of unabsorbed hemolysed blood was found in the peritoneal cavity. This patient died on the sixth postoperative day from what was evidently hemolytic toxemia.

The fifth death was of a patient who had an elective section. It was due to a blood stream infection. At postmortem a thrombosed aberrant right saphenous vein emptying into the inferior vena caca was found. An acute flare-up of what was evidently a mild, but chronic, inflammation of the right tube and ovary was probably responsible for this phlebitis with thrombus formation. This patient died on the sixth postoperative day.

The indications for these one hundred and ninety-seven sections are grouped as follows:

Tumor obstructing inlet	3
Deformity of pelvis	113
Dystocia due to soft parts	10
Constitutional diseases	10
Placenta prævia and ablatio	9
Malposition of infant	4
Multiple pregnancy (locked twins)	1
Fetal abnormality	3
Elective sections	31
Ruptured uterus	2
Eclampsia	11
Total	197

418 Eleventh Street.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Last month's *Abstracts* summarized the factors to be considered in deciding when to allow a lung compressed by artificial pneumothorax to reexpand. This month's issue presents the problem of terminating pneumothorax because of some complication before the desired healing result has been achieved. Frank R. Stafford groups such cases under the heading *Undesirable Reexpansion of the Lung* as distinguished from *Voluntary Reexpansion of the Lung*, both of which he discusses in an article in the American Review of Tuberculosis. Quotations of only the former subdivision are here presented.

Undesirable Reexpansion of the Lung: Progressive obliteration of the pleural space will develop even under high intrapleural pressure of air. Too long an interval between refills, or too small a refill may allow the lung to come out and form contact with the chest wall. When the pleural membranes have been artificially separated there is a strong tendency for them to adhere when they again come in contact, particularly so in some cases. It sometimes happens, for an unexplained reason, that the absorption of gas is unexpectedly rapid, and at a rate out of proportion to that previously experienced with that case. This is more apt to happen with patients who are coughing more than usual, or are taking more exercise. Once the lung touches the chest wall, the pleural membranes become rapidly adherent and obliteration of the pneumothorax is the result.

Chronic Effusions: In "selective collapse", expansion may easily take place in the same way, since the lower lobe is only partially collapsed and swings out and adheres to the lateral chest wall, or to the diaphragm below. Also, collapse may be lost through obliterative pleural adhesions in chronic effusions. After fluid has been present for several months, it may become thick; heavy fibrin sediment which is present organizes, pleural adhesions are produced, and the lung is gradually drawn out to the chest wall. Expansion of this type takes place from below upward, and usually begins in the costophrenic angle. After seeing a few cases of this type, one wonders whether it is not advisable to aspirate routinely the fluid, when it is sufficient in amount, and to replace it with the necessary amount of air. Substituting eleothorax to maintain the compression of the lung is advised by some.

Reactivation of Old Lesion: There are few cases of tuberculosis requiring pneumothorax treatment in which the disease is purely unilateral. The reactivation of an old lesion in the contralateral lung or the development of new disease is a constant source of annoyance, and is responsible for having to stop compression in many cases. When there is a small, or even a moderate-sized lesion, without much evidence of excavation, located in the contralateral lung above the second rib, pneumothorax will usually prove successful. On the contrary, if there is much disease in the lung field opposite the root zone or in the lower lobe, continued compression is fraught with danger, especially if the collapse is maintained at more than from 50 to 60 per cent.

Hemorrhage Control: Rubin reports end results in 324 cases of pneumothorax of two to fifteen years' duration. All were far advanced except a few minimal and moderately advanced cases, in which collapse was used in treating uncontrollable hemorrhage. In 102, or 31 per cent of the cases, pneumothorax had to be discontinued in less than three months' time, due mostly to dense adhesions obliterating the pleural space. Rubin feels that, next to traction from heavy adhesions drawing the lung out and making further successful pneumothorax impracticable, effusions becoming empyematous and reactivation of disease in the opposite lung are about on a parity as a cause of reexpansion.

In Children: Myers and Levine have reported 52 cases of tuberculosis in children treated by pneumothorax. Some of the cases have been treated for several years, but at the time the report was made eleven of this number had been discontinued for the following reasons: seven on account of spread of the disease to the opposite side, three due to the formation of obliterating pleural adhesions, and the remaining patient was killed accidentally.

Dense Adhesions: It often happens that the normal lower lobe of a lung can be completely compressed. Dense adhesions, either in the subscapular region or laterally in the region of the third and fourth ribs, prevent collapse of the disease in the upper lobe where it is needed most. High intrathoracic pressure, in which there is definite danger of rupturing the lung, will occasionally cause the air to dissect around and through the adhesions, giving a partial collapse and fair therapeutic results to a small number of cases. In past years we have persisted with this type of case sometimes indefinitely, hoping something could be accomplished. Almost invariably fluid will form which persists in spite of

frequent aspirations. Eventually, tuberculous empyema develops, and the clinical course is unfavorably influenced. We now recommend the discontinuance of refills in these cases, and allow the lung to reexpand, with perhaps advice regarding some other form of surgical collapse. A localized upper thoracoplasty is always to be preferred to a poor pneumothorax in this type of case.

Minnig says, "The formation of pleural adhesions is the one insurmountable barrier to successful pneumothorax and when this makes successful collapse impossible some other form of collapse should be tried."

Internal pneumonolysis is now being successfully used in certain types of pleural adhesions. When the pleural membranes are almost universally adherent by dense, resistant adhesions, this treatment is of no avail. It often happens that a cord, string-like, or even a broad-band type of adhesion may anchor the partially compressed lung to the chest wall overlying an open cavity. If the adhesion can be successfully separated by the electrocautery and a good collapse obtained, more drastic measures to accomplish satisfactory results may be avoided.

Our results in pneumonolysis, to date over a four year period, are as follows: Total number of cases operated upon, 59; in six of this number the work was only exploratory, as the adhesions were of the type which could not be separated; of the remaining 53 cases, 28 had cavities, and 27 of this number were closed after the adhesions were cut. Twenty-five cases were without cavities, but adhesions were preventing the collapse of heavily infiltrated or consolidated areas. Of this number the adhesions were successfully cut in twenty-three. Thus, of the 53 cases in which division of adhesions was attempted, 50, or 94.5 per cent, were successfully separated. These results were based upon the following observations: stereoscopic x-ray study of the lung after operation, change in the sputum from positive to negative, gain in weight, improvement in appetite and digestion, reduction in amount of air required, and lengthening of the interval of refills. From these results it would appear that before allowing a lung to reexpand due to adhesions, one would be justified in having a thoracoscopic study made with the idea of having the adhesions separated if they are of a suitable type.

Inconvenience and expense to the patient in obtaining refills may prove to be a major issue in deciding to terminate the treatment. In some sections of the country an experienced operator may not be available when the patients return home from the sanatorium. The fatigue of traveling and the cost of the refills must also be considered, and these may be too heavy a burden to bear.

The condition of the lung before collapse is one of the most important points in considering reexpansion. No case should be voluntarily terminated without first reviewing the old x-ray films, and making a close study of the physical signs and clinical course prior to compression. If extensive disease with a large area of excavation and marked toxic symptoms were present, then the decision becomes more difficult to make. Also, if compression was instituted to control hemorrhage there is always the fear on the part of the patient that the bleeding will recur when the refills are stopped.

The Indications for Terminating Artificial Pneumothorax, Frank B. Stafford, Am. Rev. of Tuberc., Sept., 1936.

YOUNG PEOPLE

Modern young people are generally conceived of as a race of self sufficient and impertinent egotists, according to Lee Vincent in his article "Youth Needs to Believe in Itself" in the September issue of *Hygeia.*

But when one deals with them and their problems every day as the author does, one finds them to be altogether different. Their bluffing and swaggering are merely attempts to keep up their own courage, and their actions should be considered and criticized only in the light of this.

He finds them to have courage, determination and a refusal to accept defeat, for they have valiantly gone ahead with their education at their own expense and maintained a standard of living. They poignantly realize that it is the unusual person and the heroic effort that keeps ahead. Hence the author finds that one of their major needs is inspiration.

"Of every hundred adolescent youngsters I have seen during the last five years," she says, "there have invariably been from eighty to ninety of them needing to be convinced that they have what it takes to meet life—not brilliantly, as a rule, but at least satisfactorily." Unlike the youth of our adult generation these young people have no notions of setting the world on fire. All they wish to be assured of is that they will not fail too badly. Contrary to popular opinion, youth is prone to under-evaluate themselves.

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THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

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PRESIDENT'S PAGE

Every doctor who limits his practice to some particular branch of medical practice thinks, or should think, that his specialty is the most important in the field of medical science. Because of this very human and very admirable trait, our Association is constantly requested to form special sections for particular specialties. In the past four or five years the Association has been petitioned for special sections by the Proctologists, the Industrial Physicians and Surgeons, the Anesthetists, the Heart Specialists and the Obstetricians and Gynecologists.

All of the above groups have been turned down. They were turned down, not because the Association was not in full sympathy with their pleas but because the Association felt it was too small to break down its Convention attendance into seven or eight or nine different groups all meeting at the same time. Discouraging attendance for the sectional meetings is not only unhealthy for the sections but for the Association as well.

Not to be discouraged by the Association's action and with a full understanding of the Association's problem, three of the above-mentioned groups have formed special societies that meet each year on the day following the close of our annual convention. To one of these groups, the West Virginia Society of Obstetricians and Gynecologists, this issue of the JOURNAL is dedicated.

With due respect to all the special sections and societies that meet with the Association, I feel that those who shoulder the major responsibility for bringing babies into the world have the greatest and perhaps the most sacred obligation. Their work seems to me to be the most important of all. More than any other group, their field of activity reaches further and deeper toward the heartstrings of humanity. I hope that future years will bring this organization prosperity and success, that its accomplishments will continue to lower our maternal mortality rate, and that its membership will reach far into the mountainous sections of West Virginia to clean up the last strongholds of ignorance and superstition.

Charles G. Morgan

President

THE WEST VIRGINIA MEDICAL JOURNAL

P. O. Box 787
Public Library Building
CHARLESTON, WEST VIRGINIA

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OBSTETRICS AND GYNECOLOGY

The Publication Committee decided to institute the plan of publishing special issues of the JOURNAL at intervals. Some of these special numbers have previously appeared. This month the contents deal with the subjects of Obstetrics and Gynecology.

For several years past there has been more and more interest being manifested as relates to obstetrics. Previously it was rather accepted as being just "one of the things" to be attended to in the routine of practice, but not a matter for a special study nor one which required any unusual skill. Possibly just "glorified midwifery", if forceps had to be used, or a version had to be accomplished. The development of eclampsia or the occurrence of antepartum or postpartum hemorrhage was not regarded as a preventable catastrophe. An appreciation of the responsibility of the medical attendant as regards to the physical welfare of the mother after her delivery, or as to the type of future citizen the unborn child would make, was unthought of. Even today one fears this is not so evident as it might be.

Advance is being made in West Virginia, however. Last year The West Virginia Obstetrical and Gynecological Society was organized. This year it had it's first annual meeting and the first program was presented.

There are now a number of physicians in our State who are limiting their work to activities in this particular field. Still larger numbers are giving especial attention to it. The laity is now becoming educated to the importance of prenatal, natal and postnatal care. This will soon create a demand which will necessitate an improved service in this field. The physicians are not to be blamed entirely for, until now, there has been no cooperation on the part of the patients.

It is to be earnestly hoped that from the present beginning a great interest in, and thoughtful study of, the importance of obstetrics and gynecology will be developed.—J. R. B.

MATERNAL WELFARE

One of the chief aims of the Division of Maternal and Child Hygiene of the State Health Department during this coming year is to inspire the physicians of West Virginia to do better obstetrics and to educate the mothers of this State to the necessity for adequate prenatal and obstetrical care. This phase of the program has been neglected some in the past that the time could be given to apparently more essential problems. There is no problem in the field of medicine or public health that is more important than reducing maternal mortality and reducing the number of deaths in infants under one month of age. Sixty per cent of the mothers in West Virginia who die from the complications of pregnancy or after delivery could be saved if they had received adequate prenatal care and better obstetrical methods had been used. This is no myth, but is a disgraceful fact staring us in the face every day. Forty-five to fifty per cent of the children who die under one year of age die within the first month of life. The way, and the only way, this high mortality rate for both mothers and babies can be reduced is by more adequate prenatal care and more careful obstetrics.

One way this problem can be decreased is by reeducating the physicians in the field of obstetrics. This can be done by means of lectures, demonstrations, and moving pictures. It is the plan of the Division of Maternal and Child Hygiene cooperating with the Committee on Maternal Welfare of the West Virginia State Medical Association to offer

postgraduate conferences in obstetrics during the summer of 1937. These conferences will be held at ten or twelve different locations in the State, and will be composed of several lectures, demonstrations, and moving picture illustrations. These courses will probably last for one week and will be open to all physicians. The lecturers will be well trained and experienced physicians who understand the problems of the rural practitioners.

Another way in which it is hoped a noted advance will be made in the field of obstetrics is by the establishment of prenatal clinics in many parts of the State. One or more prenatal clinics are to be organized in every county of West Virginia where there is a full-time county health unit or a public health nursing service. These clinics are to be conducted by private physicians who are interested in obstetrics and their services will be rotated allowing each man to conduct the clinic for a few months. These participating physicians will be allowed a small fee to cover expenses and time. Any expectant mother who presents a note from her family physician asking that she be admitted to the clinic will be eligible to attend and receive examinations. The county health officers will only be the business managers of the clinics and will do none of the work. The organizing of these clinics is not a step toward state medicine but rather a step to ward it off in that it will give every physician an opportunity to relearn certain principles and procedures and thereby better qualify himself for his private practice.

Last, but one of the most important activities, is the educating of the public to the absolute need of adequate prenatal care. This will, and is being done through publicity and the Motherhood Correspondence Course which is offered by the State Health Department. By such means it is hoped that all persons will become aware of the necessity for prenatal care and will not feel that the physicians are only adding more to the work so that they can charge higher fees.

It is only through the undivided support of the physicians of West Virginia that this program can be a success, and it is only through such a program as this that obstetrics can be taken out of the hands of ignorant midwives and placed in the hands of the physicians; so your support is unconditionally solicited.—T. H. B.

TSK! TSK! TSK!

In spite of the action of the A. M. A. House of Delegates last May forbidding members to allow their names to be published in commercial directories, the directory racket continues to thrive. Perhaps the racket is not so healthy as it once was but it is still in existence because it has twice been worked in West Virginia during the past two months.

The first of these two directories to come to our attention was published by a religious organization and "contained the names of the most prominent and outstanding professional men of the community." Listed among the "outstanding professional men" were several cultists, two or three fairly well known abortionists, and a number of very prominent Association members. We hazard the guess that the publication itself was a source of no comfort to the Association members whose names appeared therein.

The second directory to come under our observation is still in the process of being published. We understand that it, too, contains the names of some 20 of "the most prominent and outstanding professional men of the community." This second directory is being promoted by a professional directory promotor who travels from city to city throughout the country, who pockets his "take" in each community and who moves on to new fields of endeavor.

To put it mildly, these directories are nuisances. They have practically no advertising value. A doctor who pays to have his name included in any commercial directory usually does himself much more harm than good. He is generally classed with the backwash of his profession. And more often than not he is

scorned by his medical confreres for attempting to advertise.

What is the psychology that invariably draws some of our best physicians and surgeons into these commercial directories? Is it a desire to "get the jump" on their fellow practitioners? We do not think so. Is it a craving to see their names in print? Well, hardly. We think the real reason why most of our doctors allow themselves to be drawn into such rackets is simply because they cannot say no. They have little of what the present generation calls "sales resistance."

Aside from the ethical consideration of the problem, we cannot help but feel that the House of Delegates of the American Medical Association sought to build up this sales resistance when it passed its anti-directory resolution last spring. This resolution, whether intended or not, should help to place an emphatic "NO" on the tongue of every physician who is solicited for either direct or indirect advertising. It seems reasonable to assume that any doctor would prefer to say "NO" and stand by his profession than to say "yes" and pay out hard-earned money to every Tom, Dick and Harry who comes along with a worthless advertising scheme.

Is it ethical? Is it good business? Has such advertising any value? The only persons in the wide world who would answer any of those questions in the affirmative are those persons who are in the game for what they can make out of it.

BLOOD PRESSURES A DIME

Coney Island, that bizarre and freakish contribution of the amusement world to our modern civilization, has launched out into a new field of endeavor. The concessionaires have thrown Blood Pressure into the entertainment field at ten cents per throw. The ladies and gentlemen step right up, pay a dime, and read their own blood pressure.

Protests mild and furious have been published since the installation of blood pressure machines for Coney Island patrons. The New York State Department of Education has asked their supreme court to order this and other machines of the kind out of existence on the ground that their operation violates the state medical practice act. The maker of the machines has countered by filing an injunction to prevent interference with his business. An operator of one of the machines was arrested on August 12. *The New York State Journal of Medicine*, in a rather tolerant mood, condemned the machines but suggested that it might not be worthwhile "to get all steamed up over the imaginary perils." States the *New York Journal*, it might be "like firing a cannon at a flea."

From the standpoint of "imaginary perils" we suppose that the blood pressure machines possibly do not do a great amount of real harm. But from the standpoint of petty graft we do not see how the new Coney Island racket is tolerated by the authorities. The blood pressure is subject to so many variations in health and in disease that there are many times that the best qualified physicians are unable to give a satisfactory interpretation of it when they have their patients under constant observation. Imagine what a layman might do for a dime, the tenth part of a dollar!

PROMISES! PREJUDICES! PROPAGANDA!

Candidates for elective offices are now advancing proposals and making promises to do certain things if elected. Ill-advised campaign proposals, believed to have popular appeal, may later be enacted into laws, bringing unhappy consequences to the public and to the legislator. Medical legislation is not being proposed generally at this time. Candidates may have little knowledge of the underlying requisites for good medical service. Some may be misguided by unfounded presumptions or personal prejudices which they assume to be the general viewpoint. Others may follow the suggestions of medical propagandists.

Organized medicine has a definite respon-

sibility to both the public and the legislator in that it is the only group competent to advise in medical matters. Whenever the public has come to a realization of the probable consequences of the establishment of various schemes for control of medical service, it has definitely disapproved of the proposal. Lay groups, having great political influence, and those who would receive the medical service have stated that they do not wish such changes.

The staggering cost of government-supplied medical service in any of its forms would not be accepted willingly by an already tax-burdened public.

Informed people object to the degradation of the quality of medical service for the many in order to make an impractical gesture toward the relatively few—the marginal fringe of economic distress. Experience reveals tremendous abuses resulting from the invitation to the individual to capitalize his personal inadequacy in terms of medical service and benefit payments.

The individual whose financial need is accidental—a matter of bad fortune—wishes only an opportunity to provide for himself, and resents the prospect of regimentation and provision of unsatisfactory medical service from compulsory deductions from his earnings.

The designation of a physician by a political agency does not necessarily inspire confidence in that physician. The thinking man will not willingly give up his right to select his most confidential advisor in return for the doubtful security of a medical service purchased with his money but controlled by a political agent.

The attitude of candidates should be known and they should be informed as to the medical and social aspects of sickness, and the general attitude of influential public groups.

The American Medical Association and its constituent and component organizations have no political party affiliations and must not be drawn into party politics. They cannot, however, be released from the obligation to advise and direct their efforts to protect the individual who is ill.

To any suggestions that the medical profession has a selfish interest, it may be pointed out that sociologists emphasize that every interest can be safeguarded and provided for most effectively by those who know that interest most intimately. To have less interest and less knowledge must result in bungling measures. The patient and the physician are concerned in maintaining the quality of medical service for the welfare of both.—*A. M. A. Committee on Legislative Activities.*

INFANT RULE

Do infants train their parents, or do parents really do the training? Dr. Joseph Golomb discusses the problem in "When Infants Rule—Old-Fashioned Discipline Rallies to Parental Aid" in the May *Hygeia.* Physicians have long observed by what clever and almost imperceptible means the infant goes about his job of training his parents.

The first lesson the young one learns is to cry. It is his only method of expressing himself. Gradually he learns that though crying will bring attention in a little while, a lusty yell will bring mother on the jump. There may be no safety-pins or cramps or hunger or fear bothering him, but he gets his way about things by yelling. Thus starts the training of mother or father, or both.

Feeding time is a particular period when the child assumes the rôle of trainer. What frequently happens in the modern home is that mother reads, perhaps not wisely but too much, about what children should eat and weigh. She decides that baby must eat more. Baby does not feel like eating more, so the show begins. Mother sings, turns on the radio or gives him toys to distract him from the fact that he is eating. If he still won't eat, mother may get frantic and try to jam food down his throat. Baby gags and vomits, and hostilities cease. The infant has learned another trick.

How can parents circumvent the ingenuity of their beloved despots? They must realize first of all that "the proper time to begin training an infant is twenty years before it is born." Properly trained parents make the solution simple. With proper training and understanding rfom 90 to 95 per cent of all infants should grow up without causing trouble other than natural worry over unavoidable illness.

COUNTY SOCIETY NEWS

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Pritchard Hotel, Huntington, on the evening of September 10. The meeting was called to order at 8:30 p. m. by Dr. Walter E. Vest, president. The scientific program consisted of a very interesting and instructive lecture on "The Orthopedic Treatment of Arthritis" by Dr. Francis A. Scott of Huntington. Discussion was opened by Dr. A. R. Lutz.

CHAUNCEY B. WRIGHT, *Secretary*.

HARRISON COUNTY

Following the summer vacation period, the first fall meeting of the Harrison County Medical Society was held at the Stonewall Jackson Hotel, Clarksburg, on the evening of September 3. Dinner was served to the members in attendance, following which a number of business matters were brought up.

The society voted to recommend that all Harrison county physicians close their offices and take a half-holiday each Thursday afternoon.

Mr. Joe W. Savage, state secretary, was presented and spoke briefly about the 1937 annual convention of the Association to be held in Clarksburg. The society then fixed the dates of May 24, 25 and 26 for the convention and left the selection of the headquarters hotel in the hands of the State Program Committee.

There being no further business, the meeting adjourned at eight o'clock.

CREED C. GREER, *Secretary*.

Dr. James C. Repass of Lumberport is serving a year as resident physician in pediatrics at the Hospital Division of the Medical College of Virginia, Richmond. The term began August first.

KANAWHA COUNTY

The regular September meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel, Charleston, on the evening of September 8, with 70 members in attendance. Dr. Ray Kessel, president, presided.

The scientific program was presented by Dr. William R. Geraghty and Dr. William S. Love of the University of Maryland Medical School. Dr. Geraghty lectured on "Fractures of the Skull and Their Treatment." Dr. Love spoke on "Functional Heart Disease." Both papers were highly instructive and brought forth an interesting discussion.

During the business session which followed, Dr. H. H. Fisher, Dr. W. A. Thornhill and Dr. A. Spates Brady, Jr., all of Charleston, were admitted to membership.

P. A. HALEY, *Secretary*.

MONONGALIA COUNTY

Dr. W. C. McCally of Cleveland, Ohio, was the guest speaker at the meeting of the Monongalia County Medical Society which was held at the Morgantown Country Club on September 1. The members gathered at the Club at six o'clock p. m. for dinner, after which the scientific program was presented.

Dr. McCally's subject was "Infections of the Hand", which was most interesting and practical and which brought forth a liberal discussion from the members in attendance.

G. R. MAXWELL, *Secretary*.

OHIO COUNTY

Dr. Walter Simpson of the Miami Valley Hospital, Dayton, Ohio, was the guest essayist at the meeting of the Ohio County Medical Society which was held in the Solarium of the Ohio Valley General Hospital on September 25. His subject was "Progress in Artificial Fever Therapy." The discussion was opened by Dr. D. A. MacGregor, Dr. H. G. Wieler and Dr. J. C. Kerr.

The October meetings of the society will be held at the Hospital on October 9 and October 23. Dr. Isaac A. Bigger of the Medical College of Virginia, Richmond, is scheduled to speak on "Thoracic Surgery" at the meeting on October 9, and Dr. Charles A. Doan, Director of Research, Ohio State University, Columbus, will speak at the meeting to be held October 23 on "Hematology."

W. M. SHEPPE, *Secretary*.

PARKERSBURG ACADEMY

The members of the Academy of Medicine of Parkersburg and their wives met at the Parkersburg Elks Club on the evening of September 3, where a delightful dinner was served. Following the dinner, President H. H. Veon made a brief address of welcome to the members of the Women's Auxiliary and expressed the appreciation of the Academy for the effective services of the Auxiliary during the past year.

Dr. Berlin B. Nicholson served as toastmaster and after brief remarks introduced Mr. R. G. Piggott, Jr., who entertained with several clever tricks at legerdemain. A short business session followed during which Dr. W. R. Goff was selected to fill the vacancy as chairman of the Committee on Public Health and Legislation caused by the death of Dr. W. B. Richardson.

After the business had been transacted, the meeting adjourned and the doctors and their wives joined the Parkersburg city officials for a dance at the City Park.

B. B. NICHOLSON, *Secretary*.

GENERAL NEWS

CHANGE IN HEADQUARTERS

A number of alterations and improvements have recently been made in the Association headquarters offices in the Public Library Building at Charleston. A photograph of the new entrance from Hale Street is shown on this page. The old entrance, which

has been abandoned, was located in the narrow basement hallway of the Library building.

The former Association medical library and conference room has been converted into the reception and work room. The temporary partition between the former entrance room and Hospital Association offices has been removed and will be made over into the conference and library room. This large room is 22 by 44 feet and is now being refloored with tile. Book shelves are also being built to fit the new library room. The offices of the Hospital Association have been moved elsewhere.

The above alterations have been contemplated for some time but it was not until the Association secured a new five year lease on the Library offices that it was decided to go ahead and complete the work. The cost of alterations was offset by the Library Board in the rental figure under the new lease. It is expected that the alterations will be completed by October 10.

NEW T. B. SANITARIUM

A new forty-bed tuberculosis sanatorium costing over $170,000 was dedicated on September 17 at Wheeling, West Virginia, in connection with the 1936 annual meeting of the West Virginia Tuberculosis and Health Association.

The Federal Public Works Administration contributed about 30 per cent of the construction amounting to $43,384.10. This fund was supplemented by $30,000 from the Ohio County Court derived from the sale of county road shops to the State Road Commission. The balance was subscribed by thirty-five prominent citizens of Wheeling as guarantors. The money borrowed by this group under agreement with the county court is to be paid back by the county over a period of years without any increase in taxation.

The sanatorium is built of concrete and buff brick and is located on a three-acre plot on the county home site at Roney's Point. It is 1202 feet above sea level with a southern exposure facing a panorama of some of the most beautiful mountain scenery in West Virginia. A hill top was cut down about twelve feet to provide a level surface for the building and grounds.

The sanatorium is a one-story building but has been so constructed that a second story can be added if necessary.

The building is 217 feet long and has three different widths. The main section is 39 feet wide with a rear wing 38 feet long. Wards and rooms for patients extend east and west from the central section.

These wings contain separate accommodations for male and female patients. In each are a twelve-bed ward, a six-bed ward and two private rooms.

There are also ventilated locker rooms, and bathing and toilet facilities for each wing. On the same floor are four rooms with connecting baths for the nurses, orderly rooms with shower, utility rooms, nurses' station and linen rooms, nurses' dining room, diet kitchen, operating room fully equipped, x-ray room, reception room and recreation room. All equipment is new and modern.

In the basement are locker and toilet facilities for men and women help, a machine room, boiler rooms, kitchen and store room, built-in refrigerators, elevator and dumb waiters, incinerator, laundry and a large recreation room.

There are two 45,000 gallon cisterns hooked up with a main reservoir, and a compression tank for drinking water obtained from a drilled well on the property. The entire plant is heated by steam.

HOSPITAL MEETING SCHEDULED

The next annual meeting of the Hospital Association of West Virginia will be held at the Greenbrier Hotel, White Sulphur Springs, on Friday, November 6, 1936. Although the program has not yet been completed, it understood that ample time is being provided for informal discussions of the many problems confronting the hospitals of this State.

The morning session of the program will be divided into two parts. One section will be given over to business managers and hospital administrators and the other will be arranged for nurses' superintendents, anesthetists and medical directors for discussions of their respective problems. The meeting will close with a banquet and dance that evening.

The completed program for the November meeting of the Hospital Association will be published in the November issue of the JOURNAL.

DR. BLOSS REELECTED

Word has just reached the JOURNAL that Dr. James R. Bloss of Huntington was reelected secretary of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at its recent annual meeting.

INTERNATIONAL MEDICAL ASSEMBLY

The Interstate Postgraduate Medical Association of North America will hold its International Medical Assembly in St. Paul, Minnesota, on October 12-16, inclusive. Preassembly clinics will be held on October 10 and postassembly clinics will be held on October 17 at St. Paul hospitals. All members of the profession in good standing are invited to attend.

Among the nationally known medical men on the program will be Dr. Russell L. Haden, Chicago; Dr. Emil Novak, Baltimore; Dr. Fred W. Rankin, Lexington, Kentucky; Dr. Walter E. Dandy, Baltimore; Dr. Walter T. Dannreuther of New York; Dr. Hugh H. Young, Baltimore; Dr. George Crile, Cleveland; Dr. Charles Gordon Heyd, New York; Rear Admiral P. S. Rossiter, Surgeon General of the United States Navy; Major General Charles R. Reynolds, Surgeon General of the United States Army; Dr. Frank H. Lahey, Boston; Dr. Hugh Cabot, Rochester, Minnesota; Dr. Chevalier Jackson, Philadelphia; Dr. Elliott P. Joslin, Boston; Dr. Dean D. Lewis, Baltimore; Dr. W. J. Mayo, Rochester and Dr. Irvin Abell, Louisville, Kentucky.

TUBERCULOSIS MEETING

The Fifteenth Annual Meeting of the West Virginia Tuberculosis and Health Association was held at the McLure Hotel, Wheeling, on September 17 and 18, 1936. One of the features of the session was the dedication and inspection of the new $170,000 Ohio County Tuberculosis Sanatorium at Roney's Point.

The meeting, which was held in cooperation with the Ohio County Tuberculosis League and the Ohio County Medical Society, was one of the best in the history of the organization. Among the outstanding speakers on the program were Dr. Charles G. Morgan of Moundsville, president of the West Virginia State Medical Association; Dr. William S. Fulton, Wheeling, president-elect; Dr. Allen K. Krause of Johns Hopkins University, Baltimore, editor of the American Review of Tuberculosis; Dr. Robert J. Armbrecht, president of the Ohio County Medical Society; Dr. G. R. Maxwell, Morgantown, president of the Tuberculosis Association; Dr. E. E. Clovis, Dr. R. B. Bailey, Dr. R. M. Pedicord and Dr. W. T. McClure, all of Wheeling.

MILITARY MEDICAL COURSE

The eighth annual training course for Medical Department Reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minnesota, from October 4 to 17, 1936.

This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo

Foundation to give training in military medicine to the younger medical men connected with the Foundation. Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend clinical presentations during the morning hours. Such permission was granted and such attendance has become so increasingly popular that it is now necessary to limit the enrollment.

The program will follow the plan of past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoons and evenings will be devoted to a medica-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

This training is on an inactive duty status and is without expense to the Government. Enrollment is open to all Army and Navy reservists of the Medical Departments in good standing. Application should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska, or the Surgeon, Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

The Surgeons General of the Army, Navy, and Public Health Service have signified their desire to attend at least a portion of the course.

INDUSTRIAL HYGIENE

The bureau of Industrial Hygiene of the State Health Department, which was organized recently under the provisions of the Social Security Act and with the aid of funds received from the United States Public Health Service, has been located in Charleston, where it will carry on its industrial research. The bureau under the direction of Dr. Otto J. Swisher, Jr., will cooperate with the State Department of Mines, the State Compensation Department and the State Department of Labor in helping to solve special industrial problems.

"Because of numerous inquiries and several misunderstandings as to the purposes of the new bureau," said Dr. Swisher, "I would like to make the real purposes clear. It is the object of the new bureau to extend the benefits of preventive medicine to the one-half million West Virginians who are engaged in industry. The field of industrial hygiene is relatively new to West Virginia, and concerns itself with the preservation of the health of the industrial workers."

"By enlisting labor, insurance companies, physicians, and other interested parties," continued Dr. Swisher, "preliminary research studies of industrial environments such as ventilation, atmospheric pollution, defective lighting, heat, noise and so forth will be carried on by the bureau to ascertain the general potential health hazards and their extent throughout the State."

These studies will be carried out in close cooperation with the other industrial departments such as labor, mines and compensation. There will be no attempt made to practice clinical medicine. The bureau will confine itself to making surveys of conditions which it will report to the industrial heads, to educational work along industrial hygiene lines and to research work. Where cases of occupational diseases are found they will be referred directly to the family physician.

The ultimate aim of the bureau of industrial hygiene will be to render a consulting service and eventually serve as an educational clearing house for information dealing with occupational diseases in West Virginia, stated Dr. Swisher.

The morbidity and mortality rates arising from specific occupational diseases such as silicosis, asbestosis, lead poisoning and others are obviously much higher in the industrial life than under normal environment. The degrees to which these occupational diseases can be mitigated will be determined and the limit to which persons engaged in industrial pursuits can be exposed to these hazards without harmful results will be determined. Eighteen other states have established bureaus of industrial hygiene in an effort to reduce the dangers from industrial life.

Dr. Swisher is assisted in the bureau by Richard T. Page, industrial hygiene engineer and by S. C. Rothman, assistant engineer. The personnel has been especially trained in industrial hygiene. The work of the bureau of industrial hygiene at the present time is concerned with surveys of different industries of the State and the mapping out of a specific program along educational and research lines.

MORE SANITARY PRIVIES

Official figures from Washington give West Virginia the leading place among the forty-one states participating in the Community Sanitation Program, a Works Progress Administration project sponsored by the State Health Department. Since the beginning of the Sanitation program in 1933 under the

CWA and its continuance under ERA and WPA, there have been 122,351 sanitary pit privies built in the rural areas of West Virginia. Second place in the construction of privies goes to the State of Texas, which has built 78,285 privies since 1933 and North Carolina holds third place, having constructed 77,005 in the same period of time.

It is noteworthy that this State has been able to execute the Community Sanitation program so successfully as to lead all the other states in the number of sanitary pit privies built in the same period of time. It also shows that West Virginians realize the importance of proper sanitation and are more than ready to participate in a program which will give further protection to their health. Under the present plan the home owner provides the building materials and the WPA provides the labor from the relief rolls. In this way the cost of the privy is not a burden to either and the community shares in the benefits to health.

The program is operating in every county in the State and employs about 1,800 men. These include the district supervisors who are provided by the United States Public Health Service. In the two weeks period between June 15th and June 30th there were 2,728 sanitary pit privies built in the State.

Records at the State Health Department show that the incidence and death rate from typhoid fever, diarrhea and enteritis and other filth-borne diseases have decreased considerably since the beginning of the program, and the sanitation of rural area has been greatly improved. However, approximately 120,000 more sanitary privies need to be constructed if the State is to be fully sanitated and health hazards from filth-borne diseases eliminated. There are now on hand sufficient requisitions for the construction of privies to employ 500 more men. If the program continues at the present rate of construction for the next two years, the State will be almost completely sanitated and a marked improvement in health conditions should result.

PHYSICIANS LICENSED

Forty physicians were granted licenses to practice medicine by the West Virginia Public Health Council at their last meeting. Thirty-four of these took the examination and six were granted license by reciprocity. The examinations were held recently in Bluefield.

The physicians who passed the State examination and were granted a license were:

Mordecai Albrecht, Charleston; William Blair Baily, Wheeling; Robert Syer Barrett, Hamlin; Herbert Mather Beddow, Charleston; William Byrne Brown, Widen; George M. Caldwell, White Sulphur Springs; Donald Kenneth Coleman, Gary; James Mose Coram, St. Marys; Leon Archibald Dickerson, Scarbro; Joseph Moore Dixon, Beckley; Lester Edwin Dunman, Mullens; Charles Henry Goodykoontz, Jr., Bluefield; Ira Franklin Hartman, Buckhannon; Peter Gregory Kroll, Welch; Harry Heim Henderson, Wheeling; Caleb Rodney Layton, Beckley; Carl Arthur Maxwell, Wheeling; George Winford McCall, Lumberport; William Earl McIlvain, Glen Easton; Andrew James Niehaus, Wheeling; Robert O. Fletcher, Mannington; Orlando Shay Reynolds, Keyser; Joseph D. Romino, Fairmont; David Bernard Rosehill, Clendenin; Frithjof T. Sorum, Logan; James Robert Shanklin, Bluefield; Jennings B. Spinks, Charleston; Richard Camden Starcher, Ripley; Charles Edgar Staats, Charleston; Alfred Robert Stork, Charleston; Charles Eugene Watkins, Charleston; Stanley Weinstein, Charleston; Angus Kerr Wilson, Elkins; Sixtus Gary Zando, Williamson.

The physicians who were granted license to practice in the State through reciprocity are:

Adolph William Brazda, Richwood; H. H. Fisher, Charleston; Franklin Boyd Murphy, Philippi; Joseph Sprague Maxwell, Fairmont; David Herman Rosenfeld, Nellis; John Lee Van Metre, Charles Town.

AMERICAN PUBLIC HEALTH MEETING

The sixty-fifth annual meeting of the American Public Health Association will be held in New Orleans on October 20-23, 1936, with more than 100 separate scientific sessions scheduled to deal with the problems of administration, nursing, school health work, health education, sanitary engineering, vital statistics, industrial hygiene and the many other branches of public health work.

Complete programs for the coming New Orleans meeting may be secured by writing the American Public Health Association, 50 West 50th Street, New York City.

OHIO MEETING SCHEDULED

The ninetieth annual meeting of the Ohio State Medical Association will meet in the Public Auditorium and Hotel Cleveland, Cleveland, Ohio, on October 7, 8, 9, 1936.

PHYSICAL ABILITY

College men are taller and heavier than men not in college from the age of 16 on; and women enrolled in college are heavier at 16 than their non-college sisters, but unlike the men relinquish their weight superiority, but not their height, at the age of 19. These and other such facts are revealed by Dr. Harold S. Diehl in "The Physical Superiority of College Students" in the September issue of *Hygeia.*

He also finds that students in the large private colleges are, generally speaking, physically superior to those in state universities, while the latter are better physical specimens than those in small sectional colleges.

Accurate measurements and tabulations bear out these facts and serve as the basis for Dr. Diehl's conclusions. By this means he also finds that today's college students are superior physically to college students of a generation ago and superior to the "normal" persons described in the tables of standards used by life insurance companies, which also were compiled almost a generation ago.

The figures suggest that this country may be slowly developing a superior physical type related in some way to intellectual superiority.

The data for these studies consisted of age, height and weight measurements of 23,000 college men and 17,000 college women. Age was recorded as of the nearest birthday and only students between the ages of 16 and 21 were studied.

Records for men were received in approximately equal numbers from the universities of California, Cincinnati, Cornell, Minnesota, Princeton, Leland Stanford, Texas, Wisconsin, Yale and the College of the City of New York; while the records for women were from the universities of California, Minnesota, Leland Stanford, Texas, Wisconsin, Michigan State Teachers College, North Carolina College for Women and Smith College.

Another notable difference between college students and other groups is that during childhood the college students have grown the more rapidly in both height and weight; as a result they attain full growth several years before any of the others.

After growth in height has been completed by both the college men and women the men are five inches taller than the women, he finds.

POSTGRADUATE FORTNIGHT

The Ninth Annual Graduate Fortnight of the New York Academy of Medicine will be held this year from October 19 to October 31, inclusive. The subject will be "Trauma, Occupational Diseases and Hazards." All evening sessions will be held at the Academy Headquarters, 2 East 103rd Street, New York City. Clinical programs will be held in various New York hospitals.

A registration fee of three dollars will admit all visiting physicians to all features of the Fortnight. The program for the Graduate Fortnight has already been released and copies may be secured by writing the New York Academy of Medicine at the above address.

FROM OTHER JOURNALS

F. I. C. S.

Another of the already superabundant medical societies is in the pangs of birth. The baby has already been named—International College of Surgeons—and its nurses are getting ready to bedeck themselves with the awesome appendage of F. I. C. S. We have no assurance that there will be no transmutation into F. I. X., though for the sake of our personal friends among its nurses we hope there will be no such debacle.

What the American Medical Association thinks of this new baby is characteristically set forth by Dr. Fishbein in an editorial in the *Journal of the A. M. A.*, June 20, 1936, as follows. The italics are ours:

THE INTERNATIONAL COLLEGE OF SURGEONS—WHY?

Into the welter of scientific, pseudoscientific medical and similar organizations which now appeal for the physician's patronage comes the International College of Surgeons, promoted by none other than H. Lyons Hunt, who has already to his credit (sic) the Association of Medical Editors and Authors. The prospectus indicates that the purpose of the organization is to bring together in closer harmony the leaders of the various colleges of surgeons now in existence; yet there is not the slightest evidence that the colleges of surgeons in any other country have indicated their willingness to be brought together by this new organization. Among other objectives, the new "College" proposes to elevate the standards of surgery to a point at which international reciprocity may be realized; it is quite safe to say that international reciprocity in surgery must be a figment of the imagination for many generations

to come. Apparently there will be a publicity department to keep the public informed as to what surgery can accomplish, prizes offered for research, a museum established in Geneva, a journal published and a building erected in Geneva, where the foreign promoter, A. Jentzer, resides. There are also to be annual meetings in the individual countries as well as a meeting every two years in Geneva. Finally, there will be three classes of members, notably members, fellows and masters, who will be entitled to place after their names the appropriate alphabetic insignia. The fellows are to be selected by education, appointment or examination. *Apparently the first comers are all being appointed,* but by whom and under what authority the prospectus sayeth not. Notwithstanding the obviously inflational character of this prospectus and the complete lack of any well authenticated background for this proposed organization, a considerable number of American physicians have felt themselves highly honored by the receipt of the invitation and are already taking steps to extend the appendix to their names by the additional letters which they will purchase through this international college. There exists already an international surgical organization of standing and repute. No doubt an invitation to membership in this organization would be a considerable honor and well worthy of consideration by any competent surgeon. *An invitation to membership in the present promotion might be considered more of an insult to the intelligence of the recipient than a recognition of extraordinary qualifications.* One need not cast aspersions on the intelligence of the promoters. As psychologists they seem to have a fine insight into the weakness and folly of the average man, who likes to adorn himself in regalia and to adorn his cognomen with assorted alphabetic conglomerations.—*Delaware Medical Journal.*

BOOK REVIEWS

Narna Darrell: A historical romance by Beverley Randolph Tucker, M. D., The Stratford Company, Boston. Price: $2:50.

With the English peoples' ideal of, and struggle for, civil, political, religious and personal liberty and justice as a theme, Dr. Beverley Tucker, against a skillfully etched background of two thousand years of English and American history, has written a most interesting and delightful romance.

The novel begins at the time of the Roman invasion of Britain in the first century of the Christian era, with the union of Lucius, a Roman Centurion, and Narna, a Druid maiden picked for sacrifice to the Sun god. In succinct and lucid style Dr. Tucker gives glimpses of Roman, Saxon, Anglo-Norman and Jacobean Britain, then shifts the scene to Virginia and against the American historical background carries on the American Englishman's struggle to attain the same high ideals of his English forbears.

Using the theory of metempsychosis, or transmigration of soul, through the reincarnations of the original Lucius and Narna we have the recurring romances of these two kindred spirits from the year 54 to 1968 A. D.

Dr. Tucker, an eminent psychiatrist, has done an original piece of work, and done it well. In his allegorical interpretation we see the spirit of tolerance exerting its influence from age to age. His feeling for the past ages is a thing that sets the book apart from many pseudo-historical novels, and his knowledge of medicine and psychology appears from time to time in illuminating passages. The gist of the book is true both as to political economy, and to human nature and behavior, so that it is a book that should interest and appeal to the historian, the medical man, and the lover of good fiction.

In my opinion, it is a work that should, and will live as a worthwhile contribution to present day fiction, and as an excellent presentation to the popular mind of a lucid picture of the struggle and evolution of the English race towards its highest ideals.

JOSEPH L. MILLER, M. D.

ARTHRITIS AND RHEUMATISM

Arthritis and Rheumatic Disease. By Maurice F. Lautman, M. D., Consultant to the United States Public Health Service Clinic and Director of the Department for the Study of Arthritis, Levi Memorial Hospital, Hot Springs, Arkansas. With a foreword by Morris Fishbein, M. D., Editor, *Journal of the American Medical Association.* Whittlesey House—McGraw-Hill Book Company, New York. Price $2.00.

The author has attempted the monumental task of discussing arthritis in non-technical language and the result is well worth the time of any sufferer from this condition, particularly the dissatisfied patient. The chapters on Diet, Rest, The Arthritic Problem, and that of the Physician and Patient might particularly well be brought to the attention of any chronic arthritic by the physician.

The first portion of the book will perhaps seem needlessly long and involved to the average lay reader. To the physician whose facilities do not include the more complete hydrotherapeutic appliances it will seem perhaps that undue stress is laid on these measures. The chapter on "The Mental Aspect" might well have been enlarged.

However, all in all, the book is well worthy of presentation to the arthritic patient whose confidence and patience is waning and of perusal by physicians who treat this malady, particularly those who find it difficult to answer the patient's query as to what, why and how long.

C. B. S.

COMMUNICATIONS

A RUN OF TWINS

Journal Editor:

Some few months ago I saw an article in the WEST VIRGINIA MEDICAL JOURNAL to the effect that a physician near Bluefield had delivered two sets of triplets during his professional career. During recent months I have had a run on twins and I feel that it might be interesting to see if any one has beaten me on the number of twins in the same period.

Between June 9, 1936, and August 30, 1936, I delivered four sets of twins—five girls and three boys. This makes seven sets of twins in three years, six months and 28 days. The seven sets were born on February 12, 1933, July 24, 1933, August 21, 1935, June 9, 1936, June 23, 1936, July 25, 1936 and August 30, 1936. The last four sets were delivered in 82 days. I might say that all eight of these babies are living and doing nicely.

This communication is simply an inquiry to see if anyone has delivered an equal or greater number of twins in a similar period of time.

DR. J. M. COFER,
Bergoo, W. Va.

To the Members of the West Virginia State Medical Association:

The following petition was presented to the House of Delegates of the West Virginia State Medical Association at the last annual meeting in June at Fairmont.

"We, the following members of the West Virginia State Medical Association, recommend to the Council and the House of Delegates that they approve the formation of a special section devoted to Anesthesia, to be known as the 'Section on Anesthesia' of the West Virginia State Medical Association."

This petition was signed by Dr. Charles G. Morgan, the president of this Association, and by four past presidents, Dr. R. H. Walker, Dr. C. H. Maxwell, Dr. Roy Ben Miller, Dr. C. O. Henry and by fifty-eight other members.

This petition was presented near the end of the first business session of the House of Delegates by Dr. E. F. Heiskell, the president of the West Virginia State Hospital Association. After a fair amount of discussion, mostly of a critical nature, the petition was voted down. This was the first time a petition for such a section had been presented for consideration. Its rejection was therefore to be anticipated in view of the fact that there are already four special sections and three special groups meeting with the Association and asking for special recognition.

A great opportunity was here passed up, an opportunity to do pioneer work in a neglected medical field. Anesthesia is a vital part of every major surgical procedure. It is an important part of every surgical procedure. Yet we have as many hospitals in West Virginia that prefer the nurse anesthetist as prefer the physician anesthetist. Why does this condition exist? It exists for the following reasons:

1. Indifference on the part of the medical profession, and the surgeons in particular.
2. Nurse anesthesia, sponsored by the hospitals for financial reasons.
3. Lack of interest and lack of training on the part of the medical practitioner.

What can be done to stimulate interest in anesthesia in West Virginia? One of the easiest things which could have been done was to establish a Section on Anesthesia. Then it would have been necessary for the men who are interested in anesthesia to form this section and put on a good scientific and educational program for each annual meeting. This program would therefore be promoted as it should be under the auspices of the State Medical Association.

A second way to stimulate interest in anesthesia in West Virginia would be to combine anesthesia with surgery and call this section the "Section on Surgery and Anesthesia." This would insure one or more papers each year on anesthesia. This would give anesthesia some recognition. For six long years we have had no anesthesia paper by an anesthetist on the annual program. This method would prob-

ably be the best solution for this problem. It could not be objectionable to nor detract any from surgery but it would add prestige to surgery and to surgery's indispensible ally—anesthesia.

A third way to stimulate interest in anesthesia would be for the anesthetists to organize an independent "West Virginia Society of Anesthetists." This would have many advantages insofar as the anesthetist is concerned. This plan could be resorted to if no other method succeeds. I would advise it only as a last resort.

The physicians of West Virginia should support medical anesthesia. Anesthesia is recognized as a medical specialty. There are just as many reasons for turning over obstetrics or pediatrics to some semi-professional group as there is for permitting this group to practice anesthesia. We have enough technicians in the medical profession. We need more trained physician anesthetists. There is a big field for this work in West Virginia. Our hospitals and surgeons should be anxious to support and promote better medical anesthesia in West Virginia.

ELDON B. TUCKER, M. D.,
President-Elect of the Southern Association of Anesthetists.

WOMAN'S AUXILIARY

KANAWHA COUNTY

The Woman's Auxiliary to the Kanawha Medical Society met on September 8 at the "Tally Ho" for a luncheon. Mrs. Robert Price presided over the session. Forty-two members were present for the luncheon-meeting and opening of the fall and winter activities of the Auxiliary.

Major Francis Turner was the guest speaker. His topic was "Welfare Work in Our State."

The State Board will meet in Charleston on October 10, during which time the Auxiliary will act as hostess to visiting members.

The next meeting of the Auxiliary will be held on October 10, at the East Side Woman's Club.

MRS. CLAUDE B. SMITH, *Secretary.*

FAYETTE COUNTY

The Auxiliary to the Fayette County Medical Society met on September 15, at the Oak Hill Hotel, Oak Hill, for a luncheon-meeting. Mrs. Frank S. Harkleroad was chairman of the program and Mrs. C. W. Stallard presided during the meeting.

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Following the luncheon plans for the fall and winter, programs and activities were made. A drive for memberships was inaugurated and met with much enthusiasm.

The following new officers were installed:

Mrs. Frank S. Harkleroad, president; Mrs. W. Troutman, president-elect; Mrs. B. Brugh, first vice president; Mrs. C. V. Thompson, second vice president; Mrs. Ralph Hogshead, third vice president; Mrs. C. W. Stallard, recording secretary; Mrs. G. G. Hodges, corresponding secretary; Mrs. D. W. Shirkey, treasurer.

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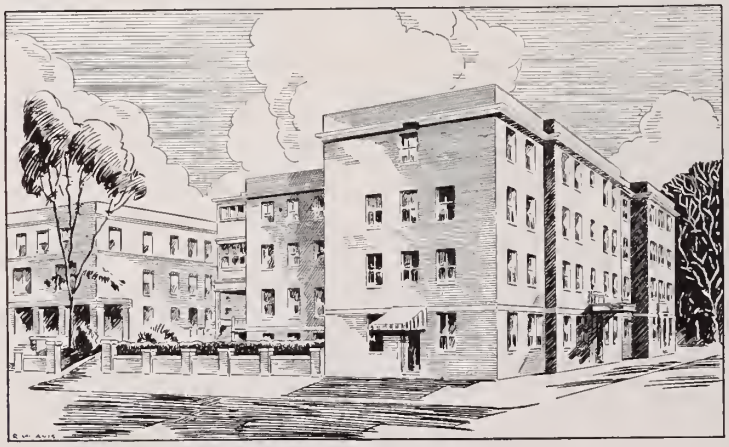

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• The sanatorium is a private institution with 150 beds, located in the Ginter Park Suburb on the Richmond-Washington National automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

• The plant consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.

• The large number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

• The buildings are lighted by electricity, heated by hot water, and are well equipped with baths.

• The scope of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

• Systematized out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.

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418 Eleventh St.
Huntington, W. Va.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII NOVEMBER, 1936 No. 11

THE HEPATIC FACTOR IN SURGICAL MORTALITY*

By W. S. Fulton, M. D., F. A. C. S. and H. R. Sauder, M. D.
Wheeling, W. Va.

Our present concepts of the importance of liver function in the preservation of normal body economy are based upon a large and rapidly growing number of physiological, pathological and clinical observations. Experimental and clinical research have brought to light many important functions of the liver; but it is probable that some, equally or more important are as yet to be discovered.

In a recent paper, Boyce[4] states that "the health and safety of the patient after operation for biliary tract disease depends in large degree upon the state of the liver." The validity of this fact is apparent from nothing more than mention of the commonly recognized liver functions:

(1) The excretion of bile containing (a) bile pigments formed largely in extrahepatic tissue, (b) bile salts, produced by the liver cells and an important agent in fat metabolism, and, (c) cholesterol.

(2) The synthesis and storage of glycogen and the subsequent hydrolysis of this substance to form glucose as required by metabolic demands, a principal factor in the maintenance of a normal blood sugar.

(3) The deaminization of amino-acids and the synthesis of urea by combination of the liberated amino radicle with carbon dioxide.

(4) The elaboration of fibrinogen.

(5) The detoxification by conjugation and oxidation of many toxic compounds.

(6) Probable participation in the production of immune bodies by virtue of the activities of the Kupffer cells, an integral part of the reticulo-endothelial system.

From consideration of these functions, it would seem logical to extend Boyce's statement and assert that the ability to recover from any severe disease, medical or surgical, is conditioned to a large degree by the functional integrity of the liver.

For many years the senior author has recognized that a major surgical procedure was tolerated poorly by a patient with long standing biliary tract infection and it has

*From the Departments of Surgery and Medicine of the Wheeling Clinic. Read before the Surgical Section of the West Virginia State Medical Association at Fairmont on June 9, 1936.

been his custom to examine at operation, if possible, the presenting border of the liver. If gross evidence of hepatitis was present, the operative procedure was minimized as much as possible; for such a patient will not usually recover from an extensive operation.

Postoperative Hepatic Insufficiency: The earlier clinical studies of hepatic insufficiency as a factor in postoperative death have been made principally in patients treated surgically for biliary tract disease. In 1922, Parham and Walters[26] reported a series of five postoperative deaths in patients with obstructive jaundice which they attributed to hepatic and renal insufficiency. In 1924 the extensive studies of Heyd[17] emphasized the occurrence of postoperative death due to failure of liver function in patients with long standing biliary tract disease. This author classified these deaths into three groups according to the time of onset and the pathological manifestations of the fatal reaction. Since then the reported observations of Cave[5], Stanton[23], Connell[6 7], Eiss[10], Bartlett[2], Fitzhugh[11], and in particular those of Boyce[4] and Helwig and his collaborators[14 15] have gone far to clarify our knowledge of this condition.

The commonly recognized causes for postoperative death include shock, hemorrhage, embolism, sepsis, pneumonia, cardiac insufficiency and renal failure. In certain cases, usually in those with a history of long standing biliary tract or hepatic disease, none of the above mentioned factors being present, either clinically or at autopsy, death is due to hepatic insufficiency. Usually such death comes as a distinctly distressing surprise to the surgeon. By ordinary standard his patient seemed to be a good operative risk and the surgical procedure itself may have been relatively simple and technically well done. Connell rightly speaks of it as "a bolt from the blue." Such fatal reactions may be properly divided into two groups.

Classification of Hepatic Deaths: In Group I, the unfavorable reaction may appear soon after operation. There is delayed and incomplete recovery from the anesthetic. Within a few hours, a semicomatose state ensues. The pulse becomes increasingly more rapid and of diminished volume. Respirations are rapid and shallow and the temperature rises rapidly, often to 104 or 105°, within a short period of time. Persistent nausea and vomiting and rapidly increasing abdominal distention may be present. Death ensues within twenty-four to forty-eight hours, before which the temperature may rise as high as 109°. Such cases are classified under Group Ia, corresponding to Heyd's Group I. In other instances, postoperative convalescence may be satisfactory for as much as three or four days. Then increasing irritability and nervousness appear, followed shortly by marked vasomotor collapse, vomiting and abdominal distention. If a biliary fistula has been established, the bile may become scanty in amount and watery, as jaundice increases. The temperature rises rapidly, usually without remission. Excitement gives way to rapidly increasing depression and the patient dies in hyperpyrexia usually within twenty-four to forty-eight hours. These cases constitute Group Ib, corresponding to Heyd's Group II. Postmortem examination in either instance will rule out the commonly recognized causes for death but uniformly shows degenerative changes in the liver parenchyma, even to the extent of profound toxic necrosis.

In Group II, corresponding to Heyd's Group III, the patient seems to do well for a few days. Within four to eight days abdominal distention develops and the heart rate becomes moderately accelerated. The temperature rises to 101° to 103°. This is followed by progressive oliguria, as albumen, casts and often red blood cells appear in the urine. The blood non-protein nitrogen rises rapidly. There is profuse vomiting, often of brown or even coffee ground material. Bleeding from the mucous membranes is common. Complete anuria may develop and death occurs in uremia. Hyperpyrexia is not a feature in this type of reaction. Autopsy reveals

marked hepatic degeneration, as in Group I, plus kidney disease. These organs are usually increased in size and show parenchymatous degeneration limited largely, but not entirely, to the tubular epithelium.

The Authors' Series of Cases: A study has been made of the postoperative mortality incident to approximately 8,200 major surgical operations performed by members of the surgical staff of the Wheeling Clinic at the Ohio Valley General Hospital during an eight year period (1928-1935). There were 344 postoperative deaths and of these thirteen were due to hepatic insufficiency. There are other cases in which this cause of death was likely; but these have been excluded from this series because of the possible presence of other death causes or because of insufficient data. The selection of the cases of this series was based upon the presence of the characteristic clinical course, as described above and the absence of any other possibly fatal postoperative complication, either clinically or at autopsy, when such examination was possible. It is regretted that postmortem examination was permitted in but four cases of the series.

Nine of the thirteen cases are classified in Group I, seven in Ia, and two in Ib; four are in Group II. There were ten females and three males in the series. The average age was 54, the youngest was 36, and the oldest was 74. Eleven of the thirteen gave a history of long standing hepatic or biliary tract disease.

Reference to Table I will show that there were four cases of cholecystitis and cholelithiasis in which death followed cholecystectomy. Two cases with marked obstructive jaundice due to carcinoma of the head of the pancreas were subjected to cholecystogastrostomy and cholecystojejunostomy, repectively. It is only in these six cases that death from hepatic insufficiency followed biliary tract surgery. There were two cases of cirrhosis of the liver. In one, omentopexy was done and in the other, death promptly followed exploratory laparotomy. One patient with fibromyoma of the uterus and one with early carcinoma of the cervix uteri were subjected to hysterectomy. Death from liver insufficiency also followed nephrectomy for hypernephroma, intestinal resection for mesenteric thrombosis, and herniorrhaphy for repair of incisional hernia.

Comment: Most of the cases reported in the literature have followed biliary tract surgery. In 1934, Heuer[16] collected from the literature 95 cases in 2,392 deaths following operations upon the gall-bladder and bile ducts. Cave expressed the opinion that ten percent of all deaths following biliary tract surgery are due to this cause. Stanton reported that fifteen of one hundred deaths incident to gall-bladder surgery were due to acute hepatic insufficiency. Connell and Boyce report the occurrence of "liver death" in 25 percent and 23 percent respectively of their cases dying after biliary tract surgery.

A few cases have been reported following surgery other than that involving the biliary tract. Four of Helwig's[15] six cases of hepaticorenal death (Group II) followed cholecystectomies. He reports its occurrence after radical amputation of the breast and after traumatic injury of the liver. Connell has studied six deaths in hyperpyrexia (Group I) following appendectomy, herniorrhaphy, removal of ovarian cyst and hysterectomy for fibroid uterus. Boyce has collected six cases following traumatic injury of the liver. Thomas[24] states that this "reaction is seen commonly and in most spectacular form as an eclamptic manifestation, occurring frequently from six to eighteen hours after delivery" but gives no statistics as to its incidence.

The exact pathological mechanisms which lead to death from hepatic insufficiency have not been definitely determined. The clinical picture is that of an overwhelming and progressive toxemia. Thomas points out the similarity of this collapse to that which occurs in histamine shock, not only in its clinical

Age	Sex	Antecedent History of Biliary Tract Disease	Diagnosis	Operative Procedure	Onset of Reaction	Time of Death	T °	Class	Remarks
55	Male	3 Yrs. Duration Mild Jaundice for 3 Months	Chr. Cholecystitis Cholelithiasis Hepatitis	Cholecystectomy	Poor Recovery 9 Hrs. Postop.	22 Hrs. Postop.	104°	Ia	Recognized as poor surgical risk
56	Female	2 Yrs. Duration No Jaundice	Acute & Chr. Cholecystitis Cholelithiasis Hepatitis	Cholecystectomy	6 Hrs. Postop.	24 Hrs. Postop.	108.8°	Ia	Hepatitis at operation
37	Female	2 Yrs. Duration No Jaundice	Chr. Cholecystitis Cholelithiasis	Cholecystectomy	15 Hrs. Postop.	34 Hrs. Postop.	103.2°	Ia	
36	Female	3 Years Recent Acute Symptoms	Chr. Cholecystitis Cholelithiasis	Cholecystectomy Appendectomy	6 Hrs. Postop.	13 Hrs. Postop.	104°	Ia	Appeared to be good operative risk
68	Female	Cholecystotomy, 10 Yrs. Jaundice, 3 Months	Cirrhosis of Liver	Exploratory Laparotomy	4 Hrs. Postop.	10 Hrs. Postop	106°	Ia	
60	Male	Obst. Jaundice 4 Months	Ca. Head of Pancreas	Cholecystogastrostomy	5 Days Postop.	8 Days Postop.	107.8°	II	Type II with hyperpyrexia Oliguria marked.
74	Female	3 Yrs. Duration 3 Mos. Jaundice	Ca. Head of Pancreas	Cholecystojejunostomy	4 Days Postop.	8 Days Postop.	107°	II	Terminal Uremia.
49	Female	G. B. Symptoms, 3 Yrs. Ascites, 1 Mo.	Cirrhosis of Liver	Omentopexy	4 Days Postop.	14th Day Postop.	101°	II	Autopsy—Fat deg. of liver. Tubular deg. of kidneys.
51	Female	No History of Biliary Tract Disease	Fibroid Uterus	Hysterectomy	2 Days Postop.	5th Day Postop.	105°	II	Teminal Uremia. B. Urea N—75
68	Female	No History of Biliary Tract Disease	Ca. of Cervix Uteri	Hysterectomy	24 Hrs. Postop.	60 Hrs. Postop.	105.5°	Ia	Good operative risk
54	Male	G. B. Symptoms 8 Yrs.	Hypernephroma	Nephrectomy	4th Day	7th Postop. Day	105°	Ib	Autopsy—Marked degeneration of liver. Cloudy swelling of tubules of kidneys.
51	Female	Hypertensive h. d. Congestive Failure 1 Yr. Before Operation	Ac. Mesenteric Thrombosis	Resection	12 Hrs. Postop.	46 Hrs. Postop.	107°	Ia	Autopsy—No peritonitis. No mx. on liver or kidneys.
52	Female	Many Yrs. Cholecystotomy 1 Yr.	Incisional Hernia	Herniorrhaphy	48 Hrs. Postop.	5th Postop. Day	104.2°	Ib	Autopsy—No peritonitis. Fatty infiltration of liver. Lymphocytic infiltration of kidneys.

manifestations but also in regard to the characteristic physical and chemical alterations in the blood. He further mentions a possible release of histamine-like substances into the circulation, the result of rapid tissue breakdown. Boyce refers to the high temperature death occurring within a few days (Group Ia) as an anaphylactoid reaction.

Regardless of the exact mechanism, it is generally conceded that this reaction occurs in patients with pre-existing liver damage, and most often in those with a history of long-standing biliary tract disease. Such hepatic damage as may exist before operation may not be extensive and is not incompatible with life. But the additional strain induced by precipitating factors such as surgical trauma, chilling of the viscera by prolonged exposure, the absorption of toxic substances resulting from tissue breakdown, the sudden release of pressure from an over-distended biliary tract and anesthesia of certain types produce a state of relative insufficiency. This leads to degeneration or actual necrosis of liver cells, increasing thereby the degree of insufficiency. Thus a vicious cycle may be established which, if uninterrupted, will result in complete failure of liver function.

It seems likely that the failure of the detoxification function of the liver is of the utmost significance in the development of the reaction. It is immaterial whether the toxins are of intrahepatic or extrahepatic origin. Strengthened in his views by most interesting experimental evidence, Boyce expresses the opinion that failure of detoxification by the liver cells can alone explain the pathological developments, regardless of whether death occurs in hyperpyrexia soon after operation (Group I) or whether it is induced by renal failure at a later date (Group II). He states that hepatic damage always precedes any renal changes. As the liver loses its detoxifying power, these toxins produce reactions of degeneration in the kidneys, organs which have little reserve power for detoxification. If the anaphylactoid reaction incident to the preceding liver degeneration is not severe enough to kill, the patient survives until the renal changes have progressed to the point of insufficiency. In reference to the hepatico-renal type of death, Helwig emphasizes the similarity of the pathological findings to those which occur in the fatal toxemias of pregnancy. He concludes that neither bile nor its products play any essential part in its production. "The clinical picture and the histological changes in the liver and kidneys seem to suggest the production of a liver toxin with a special affinity for the kidney cells."[15]

Liver death with hyperpyrexia is strikingly like that which occurs in hyperthyroidism. Weller[27] has demonstrated evidences of marked hepatitis in 54 percent of forty-eight fatal cases of Graves' disease. Beaver and Pemberton[3] found degenerative hepatic changes in 91 percent of 107 cases of hyperthyroidism. Barker[1] described necrosis and atrophy of the liver with extensive tubular degeneration in the kidneys due to thyroid intoxication. Hashimoto[13] was able to produce degeneration of liver and kidneys in albino rats by the administration of thyroid substance. In view of these facts, it seems likely, as stated by Boyce and Helwig, that death from hyperthyroidism may be due to hepatic insufficiency. Among our own cases, eight of sixteen deaths following operations on the thyroid gland are typical of those classified as Group Ia.

Liver Function Tests: In an effort to avoid these distressing postoperative deaths, it is natural to turn to the laboratory and ask that a liver function test be done during the preoperative period which would give warning of the presence of a significant degree of liver damage. The multiplicity of liver function offers many avenues of approach to this problem; but unfortunately, this very multiplicity of function adds tremenduously to the difficulty of devising a test which will give a true index of the ability of the liver to withstand the demands

made upon it by a major surgical operation. Mann[20] admits the difficulty of determining the index of the total liver function by the application of any of the commonly recognized functional tests in experimental animals. How much more difficulty may be anticipated in the evaluation of hepatic function in the clinical patient, in whom there are many more possible variants!

Dye excretion tests of many sorts have been tried but with disappointing results in general. Mann states that it is impossible to determine liver function on the basis of the rate of excretion of a dye by the liver. On the other hand, Thomas has adopted the rose bengal test as a standard procedure and believes that it accurately represents the functional capacity of the liver. Great hope was entertained when Graham[12] introduced the iso-iodeikon test, for he reported an astoundingly marked reduction in his postoperative mortality in gall-bladder surgery after its adoption as a routine measure. Other investigators[9, 24] have failed to corroborate its value and admit disappointing results. Tests of liver function based on the utilization of any phase of carbohydrate metabolism—as in the galactose tolerance test—also are of little value, for a liver may well play a normal part in this function, although insufficient in other functions. The bilirubin excretion test, although it calls into play a well recognized liver function, may give a normal result if only a small portion of the total liver tissue remains active. Quick's[21] test, which depends upon the ability of the liver to produce glycine, in the opinion of Vaccaro[25], not only discloses the presence of liver damage but approximates the amount of such damage. This is indeed a blessing from above if this be true; but this opinion must be confirmed before the test can be definitely evaluated.

Boyce states that liver function tests have been of little help in showing the degree of existing damage and that no available test gives anything but approximation. Connell and Shearer express a similar opinion. In 1933, Heyd[19] said "No test or series of tests indicates with satisfactory certainty just what will be the biotic response of the liver to surgical intervention", and this is just as true today as it was in 1933. It is obvious, then, that the preoperative recognition of hepatic damage must rest on clinical grounds and that the report of liver damage by the results of any single liver function test or combination thereof must be considered as of corroborative value only. A carefully taken clinical history, particularly in an effort to reveal antecedent disease of such nature as may have caused liver damage is probably of more value than any other part of the preoperative investigation.

Treatment: Since hepatic damage so often results from long standing biliary tract infection, it is obvious that earlier surgical treatment, when indicated, offers a most valuable method of prophylaxis against liver insufficiency. The physician may be slow to recommend a major surgical operation for the treatment of cholelithiasis and chronic cholecystitis, if the patient's symptoms are little more than slightly annoying, with perhaps only an occasional acute flareup. However, let him realize that neglect of surgical treatment of such disease may well result in insidiously progressive liver damage to such a point that the patient's very life may be jeopardized not only by any major surgical procedure which necessity makes unavoidable, but also by any severe infectious illness.

Proper preoperative preparation is obligatory in any patient whose examination reveals the possibility of liver damage, particularly in the presence of jaundice or acute biliary disease. Such preparation is wise for the good risk as well as for the bad. It is far better to prepare unnecessarily ninety-nine patients than to be guilty of neglect in the hundredth case. By a few days of preparation a poor surgical risk can be converted into a fairly good one. Important details of preoperative treatment include:

(1) Restoration of the fluid balance.

(2) Administration of a high carbohydrate diet, supplemented by intravenous glucose injections to restore the glycogen reserve of the liver.

(3) The administration of massive doses of calcium.

(4) A check of renal function.

(5) Restoration of the normal acid-base balance.

(6) Blood typing of the patient and available donors.

To minimize the occurrence of unfavorable postoperative complications, the surgeon must proceed with care. The skillful administration of a properly chosen anesthetic is of importance. Surgical trauma must be minimized, particularly by gentleness in the operative manipulations and by avoidance of prolonged exposure and chilling of the viscera. Gradual decompression of an overfilled biliary tract has been recommended on a sound basis[8], for rapid pressure changes may induce a reactive hyperemia. If gross evidences of hepatitis are present, the operative procedure must be minimized as much as possible.

The appearance of the symptoms of hepatic insufficiency after operation makes necessary prompt and vigorous treatment. The reaction in its early stages is by no means irreversible. Glucose administration must be continued. Thomas is of the opinion that subcutaneous administration is more effective than intravenous. Blood transfusion at the earliest indication of vasomotor collapse is sometimes a life-saving procedure. Acacia solutions may be used likewise if donors are not immediately available. Gastric lavage is indicated with persistent nausea, vomiting and abdominal distention and can be carried out to advantage by the installation of a nasal gastric tube.

Alkaline irrigation of the stomach should be avoided or at least used with great caution. It is a general impression that all postoperative nausea and vomiting is accompanied by acidosis. Heyd[18] points out the frequent presence of alkalosis in reactions due to hepatic insufficiency. The administration of calcium gluconate intravenously in large doses, as high as twenty grams within twenty-four hours, has been advocated by Thomas. The futility of the administration of digitalis is generally conceded; for the rapid heart action, feeble pulse volume and reduced blood pressure are not of cardiac origin, but are due to vasomotor collapse. It is our impression that drugs have little, if any, ability to restore vasomotor tone in this reaction although the use of adrenalin, ephedrine and caffeine has been advocated by others. The continuous administration of oxygen is worthy of trial. Sedation by opium derivatives is definitely indicated, but excessive narcosis must be avoided, since tissue anoxemia may be further increased by depression of respiration.

Conclusions: 1. The pathological and clinical manifestations and the treatment of postoperative hepatic insufficiency have been reviewed and discussed.

2. Of 344 postoperative deaths occurring during an eight year period, thirteen were due to hepatic insufficiency.

3. Attention is called to the importance of preoperative recognition of liver damage and the institution of proper preoperative preparation.

4. The preoperative recognition of liver damage depends upon careful clinical study and the results of liver function tests should be interpreted only in the light of the clinical findings.

5. If, at operation, the liver shows gross evidence of hepatitis, the surgical procedure should be minimized as much as possible.

BIBLIOGRAPHY

1. Barker, L.: *Thyreo-Intoxication with Necrosis and Atrophy of the Liver.* M. Clin. North America, 14; 261, 1930.
2. Bartlett, W.: *Renal Complications of Biliary Tract Infections.* Surg., Gynec., & Obst. 56; 1080, 1933.
3. Beaver and Pemberton: *The Liver in Exophthalmic Goitre.* Ann. Int. Med. 7; 687, 1933.
4. Boyce, F. F. and McFetridge, E. M.: *So-called "Liver Death".* Arch. Surg. 31; 105, 1935.
5. Cave, H. W.: *Dangers Incident to Cholecystectomy.* Ann. Surg. 84; 371, 1926.
6. Connell, F. G.: *Rapid High Temperature Deaths Following Biliary Tract Surgery.* Ann. Surg. 94; 363, 1931.
7. Connell, F. G.: *Liver Deaths (So-called).* Ann. Surg. 100; 319, 1934.
8. Cullighan: Quoted by Boyce (reference 4).
9. Cutler, C. W., Jr.: *The Iso-Iodeikon Liver Function Test as an Index of Postoperative Morbidity in Cholecystectomy.* Am. J. Surg. 26; 457, 1934.
10. Eiss, S.: *Conservation of Hepatic Functions in Gall-Bladder Surgery.* Ann. Surg. 98; 348, 1933.
11. Fitzhugh, T., Jr.: *Hepatico-Urological Syndrome.* M. Clin. North America, 12; 1101, 1929.
12. Graham, E. A.: *Estimating the Risk of Operations on the Biliary Tract by Testing the Excretory Function of the Liver.* Radiology 21; 191, 1933.
13. Hashimoto: Quoted by Boyce (reference 4).
14. Helwig, F. C. and Orr, T. G.: *Traumatic Necrosis of the Liver with Extensive Retention of Creatinine and High Grade Nephrosis.* Arch. Surg. 24; 136, 1932.
15. Helwig, F. C. and Schutz, C. B.: *A Liver-Kidney Syndrome.* Surg., Gynec., & Obst. 55; 570, 1932.
16. Heuer, G. J.: *Factors Leading to Death in Operations upon the Gall-Bladder and Bile Ducts.* Ann. Surg. 99; 881, 1934.
17. Heyd, C. G.: *Liver and Its Relation to Chronic Abdominal Infection.* Ann. Surg. 79; 55, 1924.
18. Heyd, C. G.: *"Liver Deaths" in Surgery of the Gall-Bladder.* J. A. M. A. 97; 1847, 1931.
19. Heyd, C. G.: *Liver Function and "Liver Deaths."* Surg., Gynec., & Obst. 57; 407, 1933.
20. Mann, F. C.: *Hepatic Function in Relation to Hepatic Pathology.* Ann. Int. Med. 8; 432, 1934.
21. Quick, A. J.: *The Synthesis of Hippuric Acid, a New Test of Liver Function.* Am. J. Med. Sc. 175; 630, 1933.
22. Shearer, J. P.: *Mortality Following Gall-Bladder Surgery.* Ann. Surg. 98; 1114, 1933.
23. Stanton, E. M.: *Immediate Causes of Death Following Operations on Gall-Bladder and Ducts.* Am. J. Surg. 8; 1026, 1930.
24. Thomas, W. A.: *Acute Hepatic Insufficiency.* J. Michigan M. Soc. 34; 581, 1935.
25. Vaccaro, P. F.: *The Synthesis of Hippuric Acid; Its Value in Detecting Hepatic Damage Secondary to Diseases of the Extrahepatic Biliary System.* Surg., Gynec., & Obst. 61; 36, 1935.
26. Walters, W. and Parham, D.: *Renal and Hepatic Insufficiency in Obstructive Jaundice.* Surg., Gynec., & Obst. 35; 605, 1922.
27. Weller, C. V.: *Hepatic Pathology in Exophthalmic Goitre.* Ann. Int. Med. 7; 543, 1933.

THE OLD MAN AND HIS PROSTATE*

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THE average man does not know he has a prostate until it becomes congested, infected or hypertrophied. The young man who frequently indulges in the ancient pastime of hugging his girl which has been modernized into necking, will soon realize that he has something in his perineum that is capable of producing great pain and discomfort. The pain and discomfort are due to congestion of his prostate, seminal vesicles and testicles, which may be caused by ungratified sexual desire, sexual overindulgence, masturbation, the use of a condom and withdrawal. If persisted in, sooner or later chronic prostatitis, seminal vesiculitis and varicocele will develop with all the varied, disagreeable, persistent and neurasthenic symptoms that accompany these conditions; or even a prostatic abscess with more acute symptoms may occur. These are mentioned merely to show you that even youths and men under fifty years of age may easily become aware of the existence of their prostates.

Hypertrophy of the prostate, however, is a disease of old men, that is men past fifty years of age. Those of us who have passed fifty years of age do not feel that we are old unless our prostates, or some other gland or structure is at fault. The hypertrophied prostate is distinct from the inflammatory one and the treatment of the two is entirely different.

In the inflammatory type (and even old men may have it, especially as you know from 45 to 55 is called the dangerous age for men) when they indulge in the youthful pastimes that cause it. In the inflammatory type one must adopt measures for the relief of congestion and inflammation such as rest, hot or cold applications, diathermy, alkaline diuret-

*Presented before the W. Va. State Medical Association at Fairmont on June 10, 1936.

ics, foreign proteins and opiates, and, after the acute symptoms subside, massage of the prostate, instillations in the posterior urethra and applications to the verumontanum.

The hypertrophied prostate, however, is one that is enlarged, not from inflammation but actually grows larger from the development of new tissue either glandular, fibrous, or both. No amount of heat, cold, massage or diathermy will be productive of benefit, except in the slight reduction of congestion which is present in most cases. This is particularly exemplified in the man who for years has had to get up once or twice at night to void, and suddenly after sexual intercourse, a few drinks, unusual fatigue, or exposure to cold has complete retention, or at best is able to void only a few drops of urine. Frequently he may be relieved by a hot sitz bath, rest in bed with a hot water bottle over the bladder, and hot applications to his penis and perineum. Although the above mentioned measures may enable the patient to void, the mere fact that urination is possible, by no means proves that his prostate is not causing obstruction. It is a fact, too, that if he cannot void after antiphlogistic measures have been used and a catheter has to be inserted, the mere passage of the catheter by massaging the congested and swollen mucosa of the prostatic urethra and internal meatus may reduce the edema and congestion, and allow the patient to void freely thereafter for a week, month or even years.

I have frequently seen patients in the above conditions, whom I have catheterized and then cystoscoped, in whom I found the prostate greatly hypertrophied with median and bilateral lobes projecting into the internal meatus and in the prostatic urethra to such an extent that I wondered how they had managed to void at all. I have then advised a resection of the prostate. The patient would demur and say he did not understand how he had been able to void so well up to the present time if he had so much trouble; that he would see how he got along and would let me hear from him later. In a few days, or a week he would either call to see me or else have his doctor write that he was having no trouble and voiding freely. In such cases he thinks the urologist is a scoundrel who would subject a patient to an operation he did not need, merely for the money he would get out of it.

It is just this type who go from bad to worse with a large amount of residual urine and marked back pressure on the kidneys for as long as they can void, even though they have nocturia from three to six times at night and often strain for some time before being able to void, when they finally come back or go to another urologist, are in such condition that no one would dare to operate. I have many such patients now who are doomed to catheter life, or suprapubic cystotomy, and for whom nothing more can be done because they managed to void and therefore were convinced they did not need resection. It is true, too, that often the poor results obtained by prostatectomy or resection are due to the damage to the bladder, ureters and kidneys caused by the obstructing prostate before the operation was performed.

As you know any obstruction of the urinary stream, be it in the external meatus, urethra, bladder neck or ureters will result in a damming back of the urine behind the obstruction, with the production of distention and destruction of the delicate tissues that are pressed upon. I have repeatedly seen the bladder enormously distended, walls thickened and trabeculated, the ureters large sacs resembling the intestines and the kidneys mere shells, from the back pressure due to such obstruction. Of course operation in such cases is out of the question. The best we can hope to achieve is palliation and often in attempting that uremia supervenes and the patient goes into coma and dies.

This brings to mind a case I had shortly after I hung out my shingle. This patient was a wealthy and prominent citizen of Memphis who had a hypertrophied prostate. I put in a retention catheter and got him in good condition, then cystoscoped him and

found a very large prostate with bilateral and median lobes projecting into the internal meatus, and bilateral lobes almost occluding the prostatic urethra. I had him prepared for a prostatectomy, his room at the hospital and nurse engaged and the hour set to operate. That night he phoned me he had decided to consult a widely known eastern urologist and was leaving in the morning. Or course I was greatly disappointed as I felt that I had lost a splendid opportunity to make a name for myself, because the man was so well known I felt sure if I made a success of his operation every one would hear about it. I was so upset I was disagreeable and grouchy for a week. I should, however, have been on my knees thanking the good Lord that he had not let me operate.

The eastern urologist did a beautiful operation and the patient was back home in a few weeks. Unfortunately, however, he was not relieved, in fact he was suffering more than before his operation and he continued to suffer the rest of his life. This was due to the fact that his bladder was so thickened, trabeculated and infected, although the obstruction was removed he still had two ounces of residual urine and the bladder was so badly damaged it could never regain its function or throw off the infection. I had him for a patient for the two years he lived after his operation, and was able to lessen his suffering, but to his dying day he never failed to curse the doctor who had operated upon him.

It is dangerous to empty suddenly an overdistended bladder, hence I take this opportunity to caution you against this procedure. It is very spectacular to give prompt relief to the man suffering from retention due to a hypertrophied prostate by passing a catheter and emptying his bladder, but the sudden relief of the back pressure may result in congestion of his kidneys that may produce anuria and death.

Another complication that may occur is severe hemorrhage from the rupture of blood vessels in the bladder. Although patients rarely die from this *per se*, it is an extremely painful condition which may necessitate disagreeable instrumentation to evacute the blood clots and check the bleeding. Reactions, too, may follow, which in the patient's weakened condition may be sufficient to cause death.

What symptoms does a man present who has a hypertrophied prostate? Usually the first symptom is nocturia. He will usually tell you that for some years he has been getting up once or twice to void but in the past few months this has increased to three or four. He has noticed that the stream was getting smaller and came with less force and he has been having some difficulty in starting the flow. Often he does not feel relieved after voiding. Sometimes, too, he voids a small amount and after being up and about for a short while is able to void again and pass even more than he did the first time. He tires easily and often when he sits down to read, especially at night, he goes to sleep. Frequently he has some leakage of urine during the day or incontinence at night.

If his urine is examined we will find pus cells, red blood cells and often albumen. In some cases the urine is very cloudy and shows many pus and blood cells, albumen and bacteria, while in others, especially with a large amount of residual urine, it may be clear, pale, sterile, of low specific gravity and contain only a rare pus cell. Per rectum the prostate is usually enlarged, but even if it is small to the finger in the rectum, it may be projecting markedly into the bladder or prostatic urethra as the size per rectum is no indication of the amount of obstruction at the bladder neck. Have the patient empty the bladder, then introduce a catheter and you will draw off residual urine varying in amount from one-half ounces to a quart or more. After you have checked his residual, fill the bladder with boric acid solution, remove the catheter and let him void. There will then be left in the bladder the same amount of boric solution that there was residual. I have recently seen a man 64 years

of age who had 38 ounces of residual urine, who has had more or less difficulty and nocturia for years. He has managed to attend to his business, although he urinated as often as every hour at times, both day and night. The back pressure has so damaged his kidneys, his functional test is so poor I doubt if he will ever be in shape for operation. Such cases are far from rare.

Patients with hypertrophy of the prostate usually have an increase in their blood nitrogen and a diminution of their kidney function. You can check this by drawing the blood as for a Wassermann test, adding a few crystals of sodium citrate and mailing it to your state laboratory, any good pathologist or urologist.

P. S. P. Test: The phenolsulphonphthalein test should be made after the bladder has been decompressed and interpreted in conjunction with the blood chemistry. It is made as follows: The patient is given a glass of water and one c.c. of phenolsulphonphthalein solution is injected deep into the buttock, all the urine that flows through the catheter in one hour and ten minutes is collected in a bottle and labeled first hour specimen. The catheter is then placed in another bottle and all the urine that flows through it for one more hour is collected and labeled second hour specimen. These are tested for the amount of phenolsulphonphthalein eliminated. Knowing the normal, we can easily determine how much the function of the kidney is impaired.

This paper is a plea for the earlier recognition of hypertrophy of the prostate in the hope of getting these patients to the urologist before so much injury, or even irreparable damage has been done. The damage to the bladder results in either marked dilatation with thinning of its walls, or thickening and trabeculation. Damage to the ureters produces dilatation, elongation and kinking, and to the kidney, marked dilatation of the pelvis (hydronephrosis) and pressure on the kidney substance with atrophy and destruction of its secreting tubules and glomeruli.

The diagnosis is made by the symptoms, by finding residual urine, by palpation with the finger in the rectum and finally by the cystoscope.

The prognosis depends upon the size of the prostate and the condition of the kidneys and the patient. If not too large the obstruction can be removed through the urethra by prostatic resection. If very large and the patient's condition is satisfactory prostatectomy should be done, but when the risk is too great, resection may be done, but will often have to be repeated once or even twice in the very extensive growths.

It is unfortunate that carcinoma often involves the prostate. This is a very serious condition and there is no standard treatment. As you know when many treatments are advocated not one of them is very satisfactory. It has been my experience that patients do best who are seen early, and are resected to relieve the obstruction, and then are given radium and deep x-ray therapy.

The diagnosis of carcinoma is not easy and often we are unaware of it until the report from the laboratory on the pieces removed by resection tells the sad news. In some cases, however, the finger per rectum can feel an indurated cartilaginous area in one or both lobes, or the entire gland may be of almost bony consistency. The patient, too, may complain of rheumatism in his lumbar region or aching pains along the course of the sciatic nerves. Specimens for microscopical examination may be obtained with a needle through the perineum.

Resection is now the operation of choice for hypertrophy of the prostate, and for removing the obstruction due to carcinoma. It is much less severe than prostatectomy and the time in the hospital, the suffering and the ultimate recovery are greatly lessened. The average stay in the hospital following resection is one week and the preparation with catheter drainage and blood and urine tests usually require another week. Any operation on men from 50 to 75 years of age has some risk, hence there will be some mor-

tality following resection. The chief dangers are hemorrhage, embolism, uremia, infection and pneumonia. As no general anesthetic is required, novocaine being injected into the sacral canal, the incidence of pneumonia is greatly lessened. The patient must be prepared as carefully for resection as for prostatectomy. He must wear a retention catheter for at least a week and as long thereafter as is necessary to get his tests within safe limits, and his heart, blood pressure and general condition must be such as to justify the risk. With care in preparation, the mortality will not be more than two or three percent. To insure good results, postoperative care is very essential. Patients must return for a check-up, bladder irrigations and cystoscopy at least two weeks after operation, and as often thereafter as is necessary.

For patients who refuse all operative interference, and for those who have had a resection and still have some residual urine and frequency, there is a palliative method which is quite satisfactory. The obstruction may be markedly reduced and the patient greatly relieved by the injection of boiling water into the prostate, with the prostatic needle through the panendoscope and by applying the cutting current, using the blade electrode to the obstructing nodules in the internal meatus or prostatic urethra. It may be done in the office and the patient is not confined to bed following the treatment. It is not recommended except in such cases. I began the use of this method two years ago and am much gratified at the results obtained.

The application of the high frequency, the Collings electrotone and the cutting current have all been used by Drs. Bugbee, Stevens, Kerwin, Neal and myself, but the injection of boiling water into the prostate has never been suggested before.

Conclusions: 1. The symptoms of hypertrophy of the prostate frequently are not an index to the degree of the obstruction.

2. The size of the prostate per rectum can not be relied upon to denote the amount of obstruction in the bladder or prostatic urethra.

3. Prostatic resection is the operation of choice in the great majority of cases.

4. In the hands of the expert it is a safe, efficient, time-saving operation which is not devoid of danger and will result in a mortality of only two or three percent.

5. In patients who will not submit to any operative procedure, and in those who are poor surgical risks, the method herewith proposed, of injecting boiling water and applying the cutting current will afford marked relief.

6. In complete retention of urine in hypertrophy of the prostate, never empty the bladder suddenly as congestion of the kidneys, severe bladder hemorrhage, anuria or death may result.

815-20 Medical Arts Bldg.

PNEUMONIA GERMS

There are no less than ten different kinds of germs capable of producing lobar, or as it is sometimes called, croupous pneumonia, according to Dr. Herbert L. Herschensohn who writes on "The Pneumococci" in the October issue of *Hygeia.*

Of these there is one outstanding group which almost monopolizes this "privilege" to torment the human race, he finds. It is called the diplococcus, or pneumococcus. The four types of pneumococci can be recognized by the way in which they affect immunity in the individuals they attack, by the way they grow, and to some extent by their microscopic appearances.

These germs are found in the sputum of many healthy persons, various investigators reporting a frequency of from 15 to 85 per cent of all mouths examined. Men seem to harbor more pneumococci than women do, and the person's occupation or the season of the year appears to have no bearing on the observations.

Pneumonia is communicable to a greater degree than is ordinarily appreciated. Not only are the persons who are ill with pneumonia responsible for the spreading of the disease directly, but they can do so indirectly through so-called healthy carriers, persons who have come in contact with them and now harbor the germs themselves, which are ready to be spread anywhere.

SOME REMARKS ON CLEFT PALATE AND HARELIP*

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INTRODUCTION: Once in a while a baby is born with harelip or cleft palate, or both. Such occurrences are not frequent. It is impossible to make any very definite statement as to frequence without having more careful detailed statistics on the condition of the newborn than are at present available. If these deformities were of common occurrence nearly every general practitioner would be familiar with them, would know something of their various types, and would have an idea of the proper procedures necessary for their correction. By reason of their infrequence, however, any doctor in general practice is likely to have such a case only once in a great while.

In describing the incidence of occurrence of these defects we might borrow a phrase from the early botanists and say that they are "of wide distribution but never common." Although in our experience they have seldom been seen in the negro, to the best of our knowledge they may occur anywhere, among any people, and at any time, and have done so throughout human history. We may go even further and say that their occurrence was doubtless much the same during prehistoric times. But if complete statistics of the modern occurrences of these deformities are at present not available to us, such statistics of their occurrence in earlier historic and prehistoric times are absolutely unobtainable. Evidence of cleft palate in the aboriginal inhabitants of America is shown by skulls in the Peabody Museum and the Division of Physical Anthropology in the United States National Museum. As to its occurrence in early historic times, Dorrance[1] in his "Operative Story of Cleft Palate" states: "The earliest record of cleft palate in antiquity has been reported by Smith and Dawson of London in their work entitled 'Egyptian Mummies' from which the following quotation is taken. 'Only one case of cleft palate and one of talipes (club foot) have come to light'."

It is not only human infants, however, who have these defects. The young of various other mammals are sometimes born with the same or similar deformities. In a monograph on Harelip and Cleft Palate from the standpoint of eugenics, the author, Rischbieth, says: "Comparable defects have been observed in many species of mammals; it is possible that they also occur in vertebrates lower than these in the scale. In the Hunterian Museum of the Royal College of Surgeons there are specimens showing the condition in cattle, sheep and dogs; in some of these specimens it is associated with other defects, such as anencephaly. Its occurrence in domestic animals and in wild animals born in captivity has been noted by many observers. * * * Whether the deformity occurs in wild animals born under natural conditions, or whether it is in them a new condition, only occurring when they are born in captivity, possibly as the result of bad environment and degeneration of the parents is uncertain."[2] In a footnote this same author mentions specifically lion and other cubs born in zoölogical gardens as exhibiting defects of this kind.

Three cases of cleft palate in wild animals have been reported to me, though in no case did I see the specimen myself. All three, however, came under the observation of members of the Department of Zoology at Ohio State University about 25 or 30 years ago. One was a young wild rabbit, another a white-footed long-tailed deer mouse, and the third a fox cub. Undoubtedly most young animals

*Read before the Cabell County Medical Society, Huntington, West Virginia, May 14, 1936.

with an extensive defect of this kind die soon after birth because of the difficulty of proper feeding, and it would be only by the merest chance that among wild animals even those with the defect so slight as to permit their survival would come under the observation of man.

The case is somewhat different with domestic animals. Farmers, stockmen, kennelmen, cat fanciers, and all such who have a financial interest in their livestock, keep more or less careful watch of the young animals, and are likely to notice such defects. Of course, among cattle or sheep on the range, or among ordinary dogs and cats that run free and have little money value, such defective young may be born and die without anyone taking notice of them.

The occurrence of these defects in domestic animals is of more than casual interest to us for one reason at least. Their recurrence in certain strains of animals and their frequent association with other congenital defects have materially helped in furnishing evidence of the hereditary character of these deformities. Perhaps it is not too much to say that the occurrence and recurrence of these abnormalities in animals gave the first clue to the fact that heredity plays an important part in the appearance of these defects. The evidence of this is especially clear in the case of some strains of smaller animals, such as dogs, cats, etc., whose young are born several at a time, and whose period of gestation is short and maturity early, thus allowing a rapid succession of generations, and large number of individuals. Some breeders of small animals say that cleft palate is much more likely to appear in the young of inbred strains. Guyer[3] in his book "Being Well-Born" says: "The following conditions are probably Mendelian in behavior but dominance is imperfect or uncertain" and he heads the list with harelip and cleft palate. Some other characteristics included in the list are: extra teeth, absence of certain teeth, defective hair and teeth, twinning, bilobed ear, etc.

I would like to quote here a paragraph from the chapter on Cleft Palate and Cleft Lip in my "Outline for Students on Diseases of Nose, Throat and Ear"[4]: "Hereditary tendencies to these congenital defects play such an important part in many of our case histories that they cannot be ignored. One generation may escape, though the defect may appear in both the preceding and following generations. The first child of a family may be afflicted and the following ones escape. In one family, five normal children were followed by a sixth with a cleft. Identical twins may have identical deformities, other twins different ones, or one twin may be deformed and one normal. Such incidences (with the exception of identical twins) have occurred in the author's practice."

Aside from the factor of heredity it is difficult to assign any definite cause for the occurrence of their deformities. We know what happens, but we do not know why it happens. To you, who are familiar with the details of embryology, it is sufficient to say that cleft palate and harelip, like some other congenital defects, are occasioned by a cessation of development of the parts involved at a relatively early embryonic stage. Although according to Haeckel's Law—familiar to all biologists—the life history of the individual is an epitome of the evolutionary history of the race, it would seem that in some individuals certain chapters of the history stop short of completion. When this happens a condition that normally is transient persists beyond birth, and unless corrected by surgery, continues throughout life.

The Embryological Explanation of Cleft Palate and Associated Anomalies: The following concise statement as to the origin of cleft palate and harelip from the point of view of the anatomist has been written by Paul B. Yates, M. D., Associate Professor of Anatomy in the Ohio State University Medical School.

Quite early in the development of the human embryo before the body has acquired its definite form an inpocketing of the ectoderm (the outermost of the three primitive

germ layers) in the ventral part of the head region carries the ectoderm in toward the as yet blindly ending primitive gut. This inpocketing of ectoderm is designated the stomodæum. The endoderm (the innermost germ layer) of the ventral part of the foregut joins the ectoderm in the floor of the stomodæum to form a plate, the oral plate. With its subsequent rupture and eventual disappearance the primitive oral cavity is formed in part lined with ectoderm (and from which the enamel of the teeth and other important oral structures are formed) and in part with endoderm.

Forming the lower or caudal boundary of the oral cavity at this time are the paired first

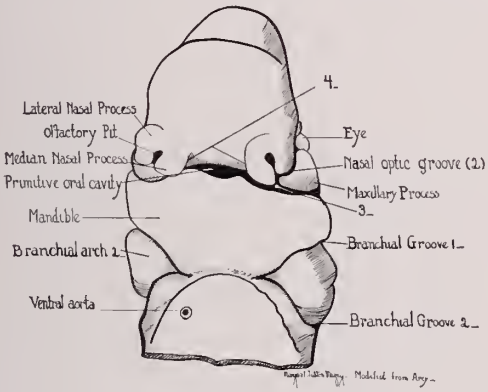


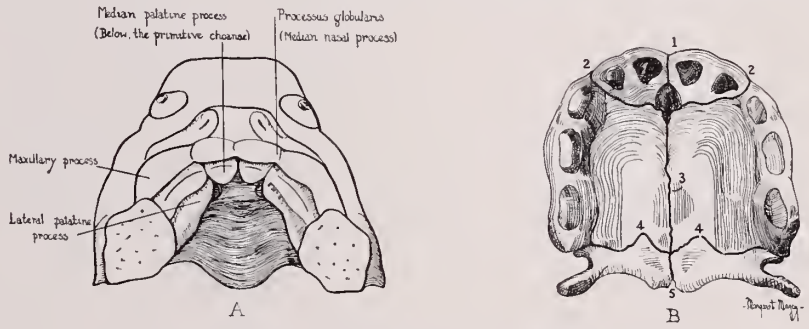
FIGURE 1. Ventral view of 12 m.m. pig's face.

branchial (visceral) arches, the mandibular arches. These each bifurcate to form the maxillary and mandibular processes, the latter being the lower or more caudal of the two (Fig. 1). The maxillary processes enter into the formation of the upper jaw and the mandibular processes fuse to form the lower jaw.

The upper or cranial boundary of the oral cavity is at this time overhung by the frontonasal fold or process. This soon sends out two processes on either side of the midline, the medial nasal and lateral nasal processes (Fig. 1). These are developed on either side of an inpocketing of ectoderm, the olfactory pit, which is destined to give origin to the olfactory epithelium.

At this time then the primitive oral cavity is bounded caudally by the approaching ventral ends of the mandibular processes; laterally by the maxillary processes which are separated from the mandibular processes by a groove (Fig. 1) which will later become the definitive mouth opening; craniolaterally by the lateral nasal processes on either side which are separated from the maxillary processes by a groove which leads up to the developing eye, (Fig. 1 - "2") the naso-optic groove which normally closes as development proceeds; and craniomedially by the medial nasal processes which are separated from the lateral nasal processes by a groove which is destined to become the nostril opening, (Fig. 1 - "3") from the maxillary process by a continuation of this groove and from each other by a groove (Fig. 1 - "4") which is obliterated later by the fusion of these processes across the midline to form the medial portion of the upper lip.

Failure of grooves "2", "3" (ventral end only) and "4" to close produces the abnormalities known as (2) oblique facial cleft, in which the eye socket communicates with the mouth through this unobliterated groove; (3) unilateral harelip, in which persistence of



Development of the human palate
A, Roof of mouth at two months B, Upper Jaw and palate of a newborn
Modified from Arey

FIGURE 2

the groove between the medial nasal process and the maxillary process permits communication of the nostril on one side and the oral cavity; and (4) median harelip of rare occurrence.

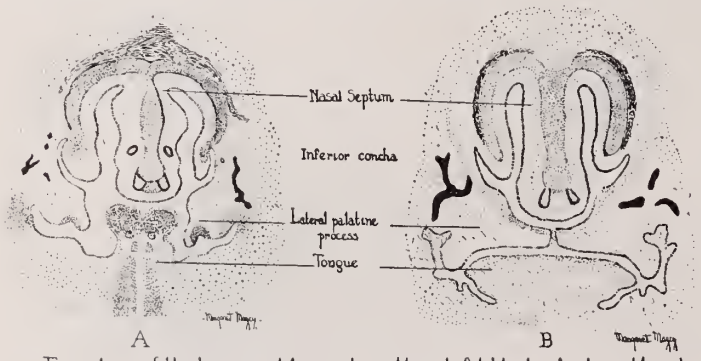
During the period between the sixth and eighth week of human development the various processes developed in connection with the oral opening fuse in an orderly sequence normally. The median nasal processes fuse with each other across the midline to form the middle portion of the upper lip and with the maxillary processes to form the medial portions of the upper jaw (premaxillæ), to complete the upper lip and to form the inferior margin of the nostril. When this fusion fails to occur harelip and anterior cleft palate (premaxillæ) occurs (Fig. 2 B [1]).

While these transformations are occurring the olfactory pit sinks deeper into the head and is separated inferiorly from the oral cavity by a thin membrane, the bucconasal membrane. This ruptures, thus putting the nasal and oral cavities into communication. From the medial wall of each maxillary process (Fig. 3 A) there now develops a horizontal process in the form of a shelf which on either side grows toward the midline above the developing tongue, the lateral palatine process. Growth of these shelves carries them toward the midline so that normally they fuse to form the palate, which thus separates the nasal cavity from the oral cavity (Fig. 3 B). This is accomplished in such a way that part of the lining of the nasal cavity in each passage is from oral epithelium and part (the upper) is from the epithelium brought in by the olfactory pit. Failure of these processes to fuse in the midline is responsible for the production of an incomplete cleft palate.

The palate is completed anteriorly not by the shelves (lateral palatine processes) but by processes which extend backward from the median nasal processes, the medial palatine processes (premaxillæ) (Fig. 2 A). They normally fuse (1) with each other across the midline and (2) laterally with the lateral palatine processes. Failure of the above fusions to take place results in a median cleft (Fig. 2 B [1]) of rare occurrence and usually associated with median harelip and (Fig. 2 B [2]) either unilateral or bilateral cleft palate which may be associated with unilateral or bilateral harelip.

Effects of Cleft Palate and Harelip: The ordinary observer of such abnormalities as cleft palate and harelip is likely to think mainly of disfigurement; the more imaginative and understanding person, or the psychologist, thinks of the mental effect upon the unfortunate individual. But the medical man thinks also of the dysfunction inherent in such a condition, and the resulting effect on the health. His concern is with methods of correction, or at least of alleviation. It is usually to the physician in general practice that the parents of a newborn child with cleft palate or harelip turn for advice and help in their difficulty.

Although these deformities may usually cause some injury to health, they are not a direct menace to life. With reasonable care an infant born with these defects has a fairly good chance of survival and of reaching adult life. There is always, however, some impairment of function of the parts involved, varying of course with the extent and type of the deformity. Not only is there interference with normal speech, sometimes to an extreme degree, but there is also more or less difficulty in eating and drinking. The baby with a completely cleft hard palate cannot suckle and therefore cannot nurse at the breast but must be fed artificially and with great care. In older children as well as in infants



Formation of the human palate - sections through fetal heads A at eight weeks B at ten weeks

Modified from Arey

FIGURE 3

difficulty in swallowing results in coughing and choking, and allows food, drink, and mouth and throat secretions to find their way into the nose and larynx and trachea. Such a condition makes the avoidance of infection more difficult than is normally the case and is likely to cause impairment of hearing, and to interfere with the senses of taste and smell. A baby with a complete cleft of lip and palate is of necessity a "mouth breather" to a great extent, and is therefore more than normally subjected to inflammation of the bronchial tubes and lungs.

Besides these health hazards there is another danger to the child with such a defect, a danger perhaps equally serious, which we might describe as a psychological hazard. The psychological effects of deformities and defects are never negligible. Even scars acquired by men in war of under other circumstances that give equal evidence of their courage, nevertheless almost invariably cause a reaction of extreme sensitiveness and desire to escape observation. The child with a congenital defect has a far greater handicap, for his deformity has come about through no action of his own. It is present during his early sensitive years when he has not yet acquired the philosophical attitude that later in life might enable him to find compensations for the fact that he is different from his associates. The child with a cleft lip cannot hide his deformity, nor can the child with cleft palate mingle with other children and conceal his imperfect speech. Normally the face of an individual mirrors his character, personality and intelligence. A facial deformity acts much like a mask in obscuring these evidences of personal characteristics, and for this reason has a peculiarly profound effect on the observer. Few persons, even those who are kindest and most tactful, are entirely successful in concealing the shock caused by the sight of such a deformity. Abnormalities of voice and speech are not so constantly apparent, but the reactions of the listener are usually no more successfully hidden from the unfortunate one. Even very small children are frequently conscious of these reactions on the part of the people with whom they come in contact, especially the reactions of other children. They tend to draw off to themselves and avoid association with other children, and try to escape the observation of strangers. A child with a cleft lip or palate is likely to feel that he has been unjustly treated by unkind nature, that for no reason at all the cards have been stacked against him. It is exceedingly unfortunate that any child born with these defects should ever be allowed to come to the age of self-consciousness without operation. It is tragic for such a child to reach school age without every possible attempt being made to remedy the defect. Probably at no period in the world's history has human life been valued as highly as it is at present. This is rightly so, and yet in our evaluation of life we should remember that physical existence is not the only essential. Not only should we conserve life, but in so far as we are able we should endeavor to bring about the

FIGURE 4

Figure 4 shows a baby with the skin and mucous membrane of the lip normally closed, but with a separation of the muscle fibers. As the child grows this results in a depression in the lip at this point from the nose to the vermilion border, causing lack of expression of the upper lip. This deformity also often gives rise to a misshapen nasal opening and corresponding depression and flattening of the alar cartilage. Operation is needed to approximate the muscular tissue of the lip and to bring the lower border of the alar cartilage to its normal position in relation to the septum nasi in order to give proper contours to the nose.

conditions that make life worth living. In many cases the correction of these congenital defects undoubtedly lengthens the life span; and in every case it greatly increases the opportunities for happy and normal life.

Classification of Types of Clefts: When we consider the origin of these defects we understand why there are various types of clefts and why the types grade into each other. Classification of natural objects or phenomena is of necessity more or less arbitrary, for in nature variations and gradations are the rule, rather than hard and fast lines of division. We realize this fact when we attempt to classify these deformities.

FIGURE 5

Figure 5 shows a patient with incomplete left-sided cleft of the lip, distorted nose and non-union of the muscle fibers. The picture to the left was taken before operation; that to the right several years after operation, showing good contour of the nose and muscle union in the lip.

The clefts we have under consideration may involve any or all of four distinct structures—lip, alveolar arch, hard palate and soft palate—just what ones are affected depending upon the extent of the cleft and whether it begins posteriorly and extends forward, or anteriorly and extends backward. For the sake of convenience in classification we make a division primarily on the basis of the part affected, and secondarily on the basis of position and extent of the defect within the part.

The terms "harelip" and "cleft palate", in use throughout many years, are in accordance with this scheme of classification; and this early distinction was probably made on the basis of "outer" and "inner" or, in other words, on whether or not the defect showed on the face of the individual. From the surgeon's point of view the distinction has additional value, because of the difference in necessary surgical procedure.

The types of cleft lip may be classified as follows:

A. Single or unilateral—right or left cleft.

B. Double or bilateral.

Either of these may be:

1. Incomplete, not extending into the anterior nares.

2. Complete, extending through the entire lip into the nose.

3. Cleft of muscle fibers, the skin and mucous membrane being intact, with usually a "notch" at the vermilion border.

C. Median cleft lip, as mentioned in the section on embryological development, a type so rare that it seems hardly necessary to include it in this classification.

The structures that may be involved in cleft palate are the soft palate, the hard palate, and the alveolar process. A simple but practical scheme of classification is as follows:

A. Cleft of the soft palate only.

B. Cleft of the soft palate and hard palate.

C. Cleft of alveolar arch (with or with-

FIGURE 6

Figure 6 shows a single left complete cleft occurring in the writer's practice; also the patient several years later. Notice that the expression of lip and contour of nose are good. The slight irregularity of the vermilion border could be corrected.

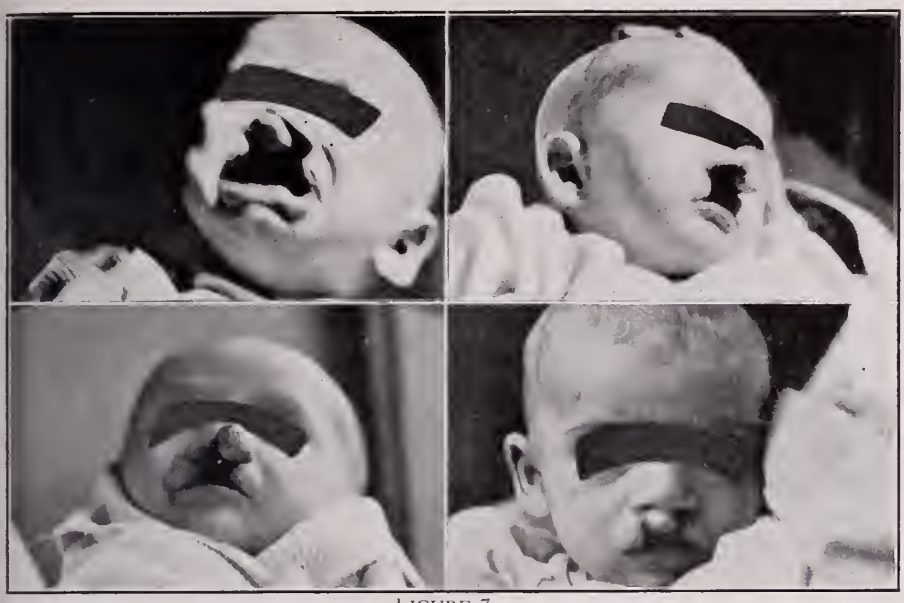


FIGURE 7

Figure 7 shows a baby with the protruding intermaxillary bone laterally placed by the septum. The lower right hand picture shows the completion of the first stage of the operative procedure, viz., replacement of the intermaxillary bone or body.

out cleft of soft palate, hard palate, or both).

B and C may be either: 1. Single; 2. Double; and either one of these may be: a. Incomplete; b. Complete.

"Cleft of the soft palate is *always* single in the median line, and any cleft of the hard palate that involves the horizontal part of either side of the palatine bone or the posterior nasal spine always involves, as a complete cleft, the soft palate in the median line. Therefore, in speaking of the soft palate accompanying clefts of the hard palate, we always mean a median and not a right or left cleft of this structure. Median incomplete clefts of the soft palate do occur, but they are not complicated by clefts in the posterior portion of the hard palate."[5]

These incomplete median clefts of the soft palate probably represent the simplest type of the deformity. "The most extensive one is a double complete cleft palate, a bilateral cleft through the arch, the horizontal plates of the superior maxillary separated, and the cleft soft palate. This deformity is usually accompanied by double cleft lip.

"In this deformity, the premaxillary (intermaxillary) bone is attached to and protruded by the nasal septum. There is on the anterior surface of

FIGURE 8

Figure 8 shows twin boys, one with complete single cleft lip, the other with incomplete cleft. The palatal clefts also vary in character and extent. They were brought to the writer when they were eight months old in a greatly undernourished condition, and with a hemoglobin of 30 per cent. Much careful attention by the pediatrician was necessary before operation.

Figure 9 shows them some months after operation.

FIGURE 9

the bone the central portion of the lip which is continuous with the skin of the columnella nasi.

"This intermaxillary body carries the tooth buds for the four upper incisors, and normally unites with the right and left alveolar processes to form the front central part of the well rounded and smooth complete upper alveolar process. Formerly, inexperienced surgeons excised this protruding body and closed the lip over the space. This results in a terrible facial deformity which must later be corrected, as nearly as may be, by reconstructive surgery, possibly by tissue implants and finally dental prosthesis."[6]

Between these two extremes of type are other types showing various combinations of the parts involved and varying degrees of extension of the defect. From cases examined a series might be arranged illustrating all the gradations from the most simple to the most extensive. Fifteen different varieties of cleft palate are generally recognized, and besides these there are still others that occur even more rarely. A classification made to differentiate all of these rarities would be too unwieldy for practical use.

A study of the records of concurrence of these deformities shows that:

1. Single or double cleft lip (incomplete) often occurs without cleft palate.
2. Clefts of the soft palate occur more often with normal lip than with cleft lip.
3. Clefts of hard and soft palate (not arch) often occur with normal lip.
4. Clefts of the arch (with or without involvement of the hard palate) are usually accompanied by cleft lip.

From the above statements it will be seen that the tendency of the clefts is to involve adjacent parts more frequently than those that are not adjacent.

In practice it has been found expedient to divide cleft palate cases into five groups as given in the following table, in which is shown the relative frequency of the various types in a series of 359 cases examined by the author:

TABLE I. NUMBER AND PERCENTAGE DISTRIBUTION OF CASES EXAMINED, BY TYPE OF DEFORMITY.

Type of Deformity	Number of Cases				Percentage Distribution
	Unilateral		Bilateral	Total	
	Right	Left			
I. Complete cleft of alveolar process, hard and soft palate	44	78	52	174	48.47
II. Cleft of alveolar process only	6	19	1	26	7.24
III. Cleft of hard and soft palate only	—	6	99	105	29.25
IV. Cleft of hard and soft palate (complicated by incomplete cleft of one side of hard palate)	—	—	—	35	9.75
V. Cleft of soft palate only	—	—	—	19	5.29
Total	50	103	152	359	100.00

Examination of this table indicates that the more extensive types of clefts are of more frequent occurrence than those that are less extensive. Group I, including the most extensive, constitutes 48.47 per cent or nearly half of the cases examined. Cleft of the alveolar process alone, without other complication, occurred in 7.24 per cent of the cases, and cleft of the soft palate alone in 5.29 per cent. It is to be noted, however, that the

occurrence of higher figures for the more extensive defects may reflect to some extent the greater seriousness with which they are regarded by the general public.

In order to make a more detailed comparison of the frequency of bilateral and unilateral clefts Table II has been prepared. In this table figures are shown for 340 of the 359 cases on which Table I is based, omiting the 19 cases of Group V of that table in which the cleft involves the soft palate only and is therefore median. In Table II, Groups III and IV of Table I have been combined, since both of these groups include cases with cleft of hard palate but not of alveolar arch. The cases in Group IV of Table I are those in which a cleft of one side of the hard palate is complicated by an incomplete cleft of the other side. These cases, 35 in number, are entered in Table II as "Bilateral, Unequal."

TABLE II. NUMBER AND PERCENTAGE DISTRIBUTION OF VARIOUS TYPES OF LATERAL CLEFTS.

Type and Location	Number, with Each Part Involved				Percentage Distribution			
	Alveolar Process Only	Alveolar Process, Hard and Soft Palate	Hard and Soft Palate Only	Total	Alveolar Process Only	Alveolar Process, Hard and Soft Palate	Hard and Soft Palate Only	Total
Unilateral:								
Right	6	44	—	50	23.1	25.3	0.0	14.7
Left	19	78	6	103	73.1	44.8	4.3	30.3
Total	25	122	6	153	96.2	70.1	4.3	45.0
Bilateral:								
Unequal	—	—	35	35	.0	.0	25.0	10.3
Equal	1	52	99	152	3.8	29.9	70.7	44.7
Total	1	52	134	187	3.8	29.9	95.7	55.0
Grand Total	26	174	140	340	100.0	100.0	100.0	100.0

A study of this table reveals several facts that are striking, but the entire significance we cannot explain with our present knowledge of these deformities. The clefts involving the alveolar process alone are preponderantly unilateral, the proportion of unilateral to bilateral being 25 to 1, or 96.2 per cent to 3.8 per cent. The clefts involving both alveolar arch and hard palate show more unilateral clefts than bilateral, but the proportional difference is not nearly so great as in those of the alveolar arch alone. Of the 174 clefts that involve both arch and hard palate 122 are unilateral and 52 bilateral, or 70.1 percent unilateral as compared to 29.9 percent bilateral. On the other hand, the clefts that involve the hard palate but not the alveolar arch show a reversal in comparative frequency; 6 or 4.3 percent being unilateral, as compared to 134 or 95.7 percent bilateral. But of the 134 that are bilateral, 35 or 25.0 percent of the total number are asymmetrical, thus showing a tendency toward the unilateral condition. If we disregard these 35, which may be considered as more or less transitional, we have six unilateral as compared to 99 bilateral, or 4.3 percent and 70.7 percent of the whole number. The grand total of lateral clefts is 340, of which 153 or 45.0 per cent are unilateral, and 187 or 55.0 per cent bilateral. If we again disregard the 35 unequal bilateral clefts, the numbers stand as 153 unilateral and 152 equal bilateral, or 45.0 and 44.7 per cent respectively of the

whole number. In other words, if we rule out the transitional forms we find the remaining ones almost equally divided between unilateral and bilateral.

The total number of unilateral clefts in this series is 153, the number of those affecting the alveolar arch alone being 25, alveolar arch and hard palate 122, and hard palate but not alveolar arch 6. In each group the left-sided, or sinistrolateral, clefts outnumber the right-sided or dextrolateral ones. The total number of sinistrolateral clefts is 103 as compared to 50 dextrolateral, or 67.3 per cent as compared to 32.7 per cent.

In the writer's series of cleft lip cases examined, the unilateral or single cleft cases show the same relative proportion of left and right-sidedness, the percentages being 67.3 per cent sinistrolateral, and 32.8 per cent dextrolateral.

Correction of Cleft Palate and Harelip: It seems hardly necessary to say that the only remedy for these deformities is surgery. The surgical procedures required for the successful operation of these cases are of a very delicate and painstaking kind and should be attempted only by men with skill and patience who have been well-trained in this special branch of surgery. Anyone unfamiliar with this work who attempts to carry through the operative procedure after having only read a description of the operation is not only likely to fail in achieving the desired results, but he makes the subsequent correction of the defect by an experienced surgeon much more difficult.

One of the first questions that arises is as to when the case should be operated upon. Several points are to be considered in answering this question: the extent and type of the deformity, the general condition of the patient, and the method of feeding.

These are not emergency operations. A baby does not die as a direct result of harelip or even of completely cleft palate. If the child dies it is because of lack of proper care or because of faulty or incorrect feeding, or some intercurrent disease. In some cases the defect makes proper care more difficult, but the defect in itself is not fatal. There is always time for careful preparation before operation, and careful preparation is essential for good results. It is important that proper feeding habits should be established. For a baby that cannot be breast fed, as is true of one with a completely cleft hard palate, this means the use of a formula from the beginning. A breast fed baby must be taught to take food from some form of feeder, and in both cases the proper amount of the proper formula must be established before operation. Fresh cow's milk should be the basis of the formula, as babies fed on condensed or evaporated milk or various prepared baby foods, do not stand the shock of operation well. A baby that has not been properly fed is an exceedingly poor risk for operation.

"The surgeon selected to do the operations should see the patient soon after birth to outline his surgical procedure and, together with a competent, alert, well-trained pediatrician, direct the care of the infant up to and through the various operations necessary to correct the deformity."[7]

We should be as sure as is humanly possible that the child is in every way fit for operation. We should have the best pediatric advice, as well as reports of the various laboratory, x-ray and blood examinations. Examination should be careful and deliberate, and it is essential that the baby be kept under observation for some time before any surgical work is done. No child should be subjected to surgery if there is the slightest reason to believe that it is not in good condition for operation. In our practice we pay careful attention to the following points:

Blood: Complete count, Wassermann and Kahn, bleeding and coagulation time, often typing; urinalysis; ear, nose, and throat; nose and throat cultures; heart, lungs, kidneys; x-ray of thymus (by röentgenologist); frequently thyroid medication; gastrointestinal condition; feeding formula that produces a normal, healthy weight curve.

The immediate preoperative preparation

is done in the hospital. It is absolutely necessary that both preoperative and postoperative nursing care during the hospitalization period be under the direction of a dependable supervisor experienced in the care of this class of surgical patients. Scrupulously careful, attentive, intelligent nursing is essential.

"The baby with a 'thymus shadow' or any tendency toward visible lymphoid tissue hyperplasia (pharynx, etc.) in excess of normal causes a greater anxiety over the possible postoperative reaction than the ordinary child. These patients are given an unusually detailed study. For some time before operation, they receive iodine medication (Lugol's, etc.) or proportionate doses of thyroid extract; those with an enlarged thymus shadow are given several x-ray treatments, with the x-ray examination repeated before operation.

"We have seen a number of patients of this type under the care of different pediatricians and their opinions differ on the subject. Fortunately we have observed severe reactions more times than death. Whether or not we believe in status lymphicatus as an entity, we do believe there is some secondary reaction in the glandular system in these patients. The endocrinologist interested in thyroid and thymus dysfunction tells us it is a lack of iodine balance and the failure of the thyroid to exert its government or direction of the body functions.

"To the operator who has seen a baby expire in from five to twelve hours after operation in spite of all that can be done, this anxiety is real; especially so after he has gone through a careful preoperative routine of examination and pediatric preparation. Many of these babies look well and seem in good condition, but often after a slight operation, temperature, pulse and respiration seem to be running wild without a governing force, and terminating in either death or several days of severe reaction. Further knowledge of the cause of this severe reaction is greatly to be desired."

"Infections of the ears and sinuses occurred in seven per cent of the patients while they were under our observation. This does not include the frequent non-purulent reactions which may flare up and subside.

"Acute tubotympanic congestion has been found in this series more frequently between the ages of three months and two years. Later on, while an acute inflammation can and does often occur, a chronic purulent otitis media or sinusitis or a hypertrophy with infection of the tonsils and adenoid more often is the complication at hand."

The surgeon's objective is to restore, as nearly as he can, normal function of the parts involved. These congenitally separated parts usually consist of a normal amount of healthy tissue, but in some patients it is difficult to secure satisfactory function in the acts of respiration, deglutition and speech, even when the operation is done at the proper age. The best results are secured when the operation is done early in the child's life. The age at which the work is started is governed by the extent and type of the deformity and by the baby's general health. In deformity of an extensive type it will be necessary to do the operation in two or more steps or stages, at different times. In other types the operation may be completed at one time.

Simple harelip without cleft palate can be operated any time after the baby is eight weeks old, and should be done during the first two years of life if the best functional and cosmetic results are to be obtained. If secondary corrective plastic surgery is necessary for the improvement of the appearance of the lips and nose it can be done at any time later in life.

Cleft of the soft palate alone, or cleft involving both soft and hard palate (A and B of the classification given earlier in this paper) may be closed at one operation. "In our experience, closure of these clefts between the ages of twelve and eighteen months has given the most satisfactory results. No doubt if the cleft could be closed soon after birth and the united palate grow and develop with the growing baby, the ultimate function would be better, but for obvious reasons we have

not considered this plan. By the time the baby is twelve months old, we have a record of the general physical condition during this period and a good idea of fitness for operation. We have had ample time to study the renal and vascular systems. Blood studies give us much necessary information. The study of the endocrine system in infants presents a problem unless the endocrinopathy is one of extreme type. We feel, as before mentioned, that the baby with a disturbance of this function mild enough in form to escape our present day method of examination, yet severe enough to manifest itself following surgery or other shock, is a very dangerous patient for operation.

"At the fourteenth month, the soft tissues of the hard palate have developed sufficient thickness to withstand careful manipulation without rupture. The blood supply is adequate to facilitate good union. The soft palate has developed into a real muscular structure of sufficient size for easy surgical work. All these factors, in our experience, favor this age for operation on the soft and hard palate clefts." * * *

"If the cleft extends into the hard palate, the operation is begun by elevating the flaps of this structure, first, sufficiently to allow approximation. The periosteum is included in the flap. The soft palate is then detached from the posterior border of the horizontal part of the palatine bones sufficiently to allow approximation. The borders of the entire cleft are then denuded of mucous membrane for suturing. The muscle tissue at the borders of the soft palate is then well exposed for approximation. At this stage, two No. 22 gauge silver wire stay sutures are introduced through the soft palate from the oral surface on one side and brought out through the opposite half of the structure, to be united on lead plates at the completion of the operation. These are only to oppose the action of the tensor palati muscle and prevent the soft palate suture line from opening under the strong contraction of this muscle. They are not used to draw together the cleft borders, and the tension must be correct to prevent injury to the muscle.

"The entire cleft is then closed with horsehair sutures and the operation ended. Careful attention is given to the uvula, as parents invariably comment on a well or poorly formed uvula, rather than upon its usefulness in the structure of the new palate.

"By using the small sized wire fastened over the lead plates to prevent cutting, there is little or no injury to the muscle. When the palate is not contracting, there is no tension on the muscle. By this means, we have not found it necessary to use lateral incisions or any form of detachment of the muscles from their lateral anchorage.

"In reference to the treatment of clefts of the alveolar process, operators have divided themselves into two main groups, one advocating closure and wiring of the parts to secure union; the other doing no surgery on the arch but closing the lip over the cleft, depending on the pressure of the closed lip to approximate the bones without union.

"In our practice, the alveolar cleft is closed between the second and third months of age and held in position by silver wire, the soft tissue closed with horsehair. At this age, the bones are flexible and are not fractured. The technique varies here with the problem at hand. * * *

"In this method also, the careful placing of the wires and the absence of too much tension is a most important step. I have never seen a troublesome hemorrhage or bone necrosis as a complication of this operation. We feel that a united arch is a part of an ideal restoration and more satisfactory later than one left ununited."[10]

From the foregoing description of surgical procedures it is apparent that various factors are to be considered in deciding upon the best time for operation. In our experience we have found that the ideal time for operation of each of the different types of clefts, providing other conditions are favorable, is:

1. Cleft lip, when the baby is eight weeks old, or soon thereafter.

2. Cleft of alveolar arch, when the baby is from two to three months old.

3. Cleft of hard and soft palate, at the age of fourteen months.

4. Cleft of soft palate, at fourteen months.

In case of extensive clefts, more than one operation will be necessary; for example, if a cleft involves alveolar arch and hard and soft palate, the best results will be obtained if the arch is operated at two months or soon after, and the palate about a year later, when the child has reached the age of fourteen months. If the operation can not be done at the ideal time, it should be done if at all possible by the time the child has reached the age of two years, or before the onset of speech.

The following table has been prepared from the records of a series of patients operated upon by the author for clefts of the alveolar arch, hard and soft palate. It shows the age of the patient at time of operation, the number operated for each type of cleft, and the mortality.

TABLE III. MORTALITY IN OPERATIONS FOR CLEFTS OF HARD AND SOFT PALATE AND OF ALVEOLAR ARCH, BY AGE OF PATIENT.

Age of Patient	Number of Patients Operated Upon			Patients Dying					
				Number			Percent		
	Alveolar Arch	Hard and Soft Palate	Total	Arch	Palate	Total	Arch	Palate	Total
3 but under 6 months ...	85	2	87	2	—	2	2.4	0.0	2.3
6 but under 24 months ..	26	107	133	1	2	3	3.9	1.9	2.3
2 but under 6 years	3	44	47	—	2	2	.0	4.5	4.3
6 but under 12 years ...	10	52	62	—	—	—	.0	.0	.0
12 to 37 years	1	16	17	—	1	1	.0	6.3	5.9
Total	125	221	346	3	5	8	2.4	2.3	2.6

The mortality rate is low, and this is to be attributed, no doubt, to very painstaking preoperative examination and extremely careful preparation. In every case where death occurred, the operation was performed with the advice and approval of the pediatrician and other consultants.

The time of operation is of the utmost importance, if the best results are to be secured. Too early operation of the hard and soft palate usually results in partial or complete failure. Not only is the operation likely to be unsuccessful, but the failure to secure primary union of the parts produces scar tissue, or in some cases loss of tissue, and renders subsequent operation more difficult and less satisfactory. Final restoration is never so satisfactory in these cases as in a successfully performed first operation. Such injudicious early surgery often permanently impairs function that might by proper handling be preserved. Several points are to be emphasized in connection with these operations:

1. Physical fitness of the patient.
2. Proper age of the patient for operation.
3. Adherence to surgical principles.
4. Proper preparation.
5. Proper aftercare.

In stressing the proper age for operation we do not mean to imply that nothing can be done for patients who have been allowed to reach a later age unoperated. Much can be done for older children or adults who have

never been operated upon, although the operation may never be as completely successful in such cases as it would have been if done at the ideal age. Even cases that have been unsuccessfully operated upon are far from hopeless, and often much can be done to remedy the defect and improve the functioning of the parts involved. To all these cases we might apply the old adage, "Better late than never, though better never late."

Teeth: In patients with cleft of the alveolar arch the permanent upper front teeth are always irregular and often defective, and this is true whether or not the clefts have been operated upon. In my series there are several patients thirty-five years of age or older. Some of them had never before been operated upon and yet many of the upper teeth were defective. It is supposed that the same factor that causes the cleft, whatever that may be, also causes the irregular dentition, perhaps by interfering with the proper formation of the tooth buds. Another factor that may perhaps have a part in causing poor dentition is that the presence of the cleft may be a cause of poor nutrition and metabolism in the early years of life, and these in turn may affect the teeth.

There is irregularity of the teeth if no operation is performed, though with any technique of operation the teeth are somewhat irregular. The irregularity may be made worse by the improper use of wires in operating. In cases operated upon for double cleft alveolar arch, if the premaxillary segment is set too far forward it causes the very noticeable deformity of protruding upper lip. If it is set too far back it causes a noticeably receding upper lip. In either case there will be improper occlusion of the upper and lower teeth.

Some methods of operating interfere more than others with the development of good teeth. Some injury to the teeth apparently cannot be avoided in some cases, but as a rule careful work on the part of the surgeon preserves most of the permanent teeth. After the work of the surgeon is finished—in most cases it is likely to be much later—the work of the orthodontist begins. Even the patient who has been operated upon with greatest care is likely later to need some corrective dental work done. Men well-trained in this specialized dental work are able to bring about a remarkable improvement on irregular teeth.

Speech: Speech difficulties constitute one of the greatest and most obvious handicaps of the cleft palate patient, and this is one reason why we advocate operation early in the life of the child. We feel strongly that the palate cleft should be closed before or at the time of the onset of speech. With most children this comes early in the second year, though even at that age most babies have been for some weeks, or even months, making speech sounds and listening to themselves, checking their own speech efforts. Other considerations, however, which have already been discussed, make it advisable to wait until the end of the first year for the cleft palate operation, but it should be done early in the second year. During the second year the child builds up speech impressions and habits rapidly, and defects acquired during this formative period are especially difficult to overcome later.

"Russell[11] and many other authors[12 13 14] insist that the auditory patterns are established and even many speech sounds, such as *m, p, b, d, t,* the vowels, etc., are already well practiced before the middle of the first year. * * *

"Most children with cleft palate, if operated on early, begin to talk at the usual age; if not they may be retarded and will not make the attempt until later. Speech is learned through the auditory, visual, and kinesthetic senses. The child attempts to reproduce phonetically the auditory and visual impressions from the speech used around him. The normal child, by checking his own phonetic output through these senses, in time learns to talk correctly. In other words, his audible results check with his speech impression and memory. This cannot be attained in

the child with a defective peripheral speech organ.

"When such a child checks his own imperfect attempts confusion results, and finally his faulty production is recorded in his speech center as his speech-directing mental pattern, which is, of course, incorrect; that is, he has incorrect speech impressions. * * * Once established, these impressions are difficult to break down. * * * These patients who have begun speech with a cleft palate have to be taught new speech like a new language so far as articulation is concerned.

"Timbre, pitch and intensity have to be regulated by correct breathing habits, as many of these patients, of necessity, waste much air in their attempts at speech. Exercises in correct breathing or use of the breath during speech must be employed.

"This waste of air becomes a habit in complete clefts through failure to develop the three contact or stop points or positions which act as a resistance to the column of air during its passage through the peripheral speech organs. These points are: first, the dorsum of the tongue in contact with the soft palate and posterior pharyngeal wall; second, the tongue tip against the hard palate and teeth; third, the lips and teeth.

"A soft palate which does not shut off the air column from the nasal cavity when it should, disturbs certain speech sounds materially, such as p, f, s, th, etc., and the speech defect is called rhinolalia aperta.

"Palatal adhesions restricting passage of the air, when it should not be restricted, as for *n*, *m*, and *ng*, cause a disturbed speech and voice similar to that heard from one who has a cold in the head. This difficulty is called rhinolalia clausa.

"Since the soft palate or velum palati is a very active and the only movable part of the palate, it is the most concerned in speech. Therefore, it is our duty as palate surgeons to be most considerate in our manipulation and treatment of this muscle during operative procedures. It is composed of an intricate set of muscles, each with a special function. If a child in whom these muscles are separated by a congenital cleft can have them properly approximated at an early enough age with the least possible scar tissue or injury to the muscle body or tendons, he will stand a chance of developing almost normal speech under and following proper speech training.

"This structure should receive as careful surgical consideration as the iris in an eye operation if good phonetic results are considered, because, as the iris regulates the light in vision, so does the soft palate regulate the air flow into the nasal cavity during speech. One of the outstanding speech defects of cleft palate patients is the failure of this air regulation.

"Surgical faults which impair action are:

1. A short soft palate.
2. An improperly aligned union.
3. Unnecessary scar tissue.
4. Injury to muscle attachment and nerves.
5. Adhesions.
6. Injury during removal of tonsils and adenoids.

"The effect of a short palate is obvious. If the borders of the soft palate are not approximated evenly, that is, if one segment is attached too high or 'crimped' by badly placed sutures, the action of the palate will be impaired. Injury to the medial upper part of the superior constrictor during adenoid removal happens more often than is realized. In swallowing and in some speech production this part of the muscle contracts and forms a pad which meets the soft palate. A break in the continuity of this muscle impairs this function in proportion to the injury and secondary scar. The effect on speech is that of a short palate. Injury to the faucial pillars will shorten or stretch the palate and produce the same effect on speech and deglutition."[15]

If the operation is done at the ideal time some patients will have no noticeable speech defect. Speech training will be necessary, however, in some of these patients, and in all cases where the operation is done after the onset of speech. Such training should be begun early in order that the child may acquire the proper use of the united palate, and

afterward learn to correlate the action of palate, tongue, lips and teeth in the correct production of speech. In cases where the cleft was a simple one such training may develop a normal conversational voice and even a good singing voice without a great deal of difficulty. In cases where the cleft was extensive, much tedious training is often necessary, extending over a long period of time. In such cases full coöperation on the part of the parents is imperative, as well as good concentration on the part of the patient.

Some Mistaken Ideas Concerning Cleft Palate: The birth of a child with a deformity is probably always a cause of disappointment to the family, and if the deformity is an extreme or obvious one there is likely to be actual shock to the parents. In such cases it may sometimes be plainly evident that they hope the infant will not survive. In one or two cases we have been sure that feeding orders were not being carried out and that the baby was rapidly starving, perhaps because those in charge felt that early death was preferable to life with such a handicap. If such an attitude of mind is suspected it is well for the physician to lay great stress upon the fact that much can be done for children with these defects, even for the child with the most extensive type of cleft. Death and deformity are not the only alternatives.

An opinion held by some uninformed people is that these defects are associated with mental deficiency. This is an erroneous idea, for, so far as we can judge, these congenital clefts do not in any way affect the mental ability of the individual. These children are usually as bright and alert as any, though they may suffer severely from psychological reactions if operation is neglected.

Other mistaken ideas are concerned with the origin of these deformities. These beliefs are many and for the most part are probably harmless enough, though they may interfere to some extent with the better understanding of these defects on the part of the general public. But there is one of these beliefs that may at times need refutation. It sometimes happens that one parent blames the other, or even that each blames the other, for the child's condition. This idea has no foundation in fact. Neither mother nor father can be held responsible for this condition in the child; and, for the sake of the child, they should if possible be brought to realize this. The child has enough to endure and enough of a burden to carry without the added psychological handicap of emotional strain between the parents.

BIBLIOGRAPHY

1. Dorrance, G. M.: *The Operative Story of Cleft Palate.* Philadelphia, Saunders, 1933, p. 1.
2. Rischbieth, H.: *Harelip and Cleft Palate.* Eugenics Laboratory Memoirs, XI, Treasury of Human Inheritance, Part IV, Section XII, pp. 84-5. Dulau & Co., London, 1910.
3. Guyer, Michael F.: *Being Well-Born.* The Bobbs-Merrill Company, 2nd Edition, 1927, p. 209.
4. Beatty, H. G.: *An Outline for Students on Diseases of Nose, Throat and Ear.* Ohio State University Press, 1936, p. 79.
5. Ibid., p. 80.
6. Ibid., p. 80.
7. Beatty, H. G.: *The Care of Cleft Palate Patients.* Transactions of the American Laryngological, Rhinological and Otological Society, Inc., 1935, p. 167.
8. Ibid., p. 168.
9. Ibid., p. 172.
10. Ibid., pp. 176-8.
11. Russell, G. Oscar: *Speech and Voice.* MacMillan, 1931; Dysphonia, Volta Review, 1934.
12. Travis, Lee: *Speech Pathology.* Appleton, pp. 53-54, 1931.
13. Ravizza, F.: *Psicologia della lingua.* Bocca, p. 72, 1905.
14. Wundt, Wilh.: *Volkerpsychologie.* I. die Sprache. Kroner, p. 286, 1921.
15. Beatty, H. G.: *The Care of Cleft Palate Patients.* Transactions of the American Laryngological, Rhinological and Otological Society, Inc., 1935, pp. 180-2.

POSTURE IMPROVEMENTS

Posturegraphs and shadowgraphs are the latest developments with which to interest young persons in the improvement of their posture, Gwladys Lewis finds. She therefore has written an article dealing with methods and means for making these 'graphs; it appears in the October issue of *Hygeia* under the name, "A New Approach to Posture Training."

A comparison of pictures of good and bad posture and a knowledge of how to improve on it tend to create a strong desire for self correction. Adolescents especially are very anxious to know definitely how they differ from the rest of the group, what causes their defects and what to do to correct them.

Pictures of a large number of people can be taken at a comparatively low cost and in a surprisingly short time.

THE FOUNDERS OF THE W. VA. MEDICAL ASSOCIATION*

By CLAUDE L. HOLLAND, M. D., F. A. C. P.
Fairmont, W. Va.

In the book of Job, fourteenth chapter, beginning with the seventh and ending with the tenth verse you will find these words: "For there is hope of a tree, if it be cut down, that it will sprout again, and that the tender branch thereof will not cease. Though the root thereof wax old in the earth, and the stock thereof die in the ground; Yet through the scent of water it will bud, and bring forth boughs like a plant. But man dieth, and wasteth away; yea, man giveth up the ghost, and where is he?"

In Nature there is neither mercy nor justice; likewise in death there is neither mercy nor justice. In each we see a law of design at work, but the result of the design is ever in the power of disintegration. For therein constructive and destructive forces are in action in which the anabolic and katabolic forces of nature create a paradox wherein the psychical man is baffled before the veil within the chemicophysical reactions between life and death.

In Nature we behold the mountains builded skyward, and likewise leveled to the depths by the same geological law linking the sky above and the ocean beneath in the evolutionary processes of the ages.

In death the Pale Horse of the Apocalypse rides on to victory over the crowning achievements of civilization. Death speaks to the wise and the foolish, the rich and the beggar upon equal terms. Death summons the rich to hasten the disrobing of his gorgeous trappings, and the beggar to cast aside his wrappings of rags, each returning to the dust. Side by side in nakedness the twain are leveled before the Grim Reaper. The accomplishments of the wise and great are of no more value to the decrees of Death than the failures of the foolish and the humble. The wise man Solomon, Preacher to Israel, has sounded this knell throughout the ages when he exclaims, "All is vanity and vexation of spirit." In the light of these observations can the rational man be satisfied as a worshipper of either Nature or Death?

Our civilization of today and yesterday in contrast with the Greek civilization of the past are worshipers of Death. We await the final summons for an apprehension of what is termed "the hereafter." The Greek civilization on the other hand through its perfection in the arts became a worshiper of Nature from the standpoint of the human body.

To the ancient Greeks, Nature was alive, her every form symbolizing life because of which we are never wearied by sameness as the diversified combinations of forms are revealed in her mythological figures. Their gods and goddesses were ever ascending and descending from Olympus above to Hades beneath and to Earth as the center of all things.

From this activity of the passions of her gods and goddesses the intellectuals of all subsequent ages have ever done homage to her poets, as they have marshaled in heroic strains these passions of gods and men. The mythological traditions of the Greek have lived because he accepted the "finitude" of the universe. Subsequent civilizations have become worshipers of the "infinitude" and a failure to contrast it with the "finitude" of the Greek has left us—in view of the power behind the "infinitude"—as worms and the creeping things upon the face of the earth.

Man through mathematical calculations and astronomical and geological observations

*Prepared in connection with the dedication of the Founders' Monument at Rivesville on June 9, 1936.

has encompassed the heavens, the earth, and the seas and brought them within his ken, but with what results? Man, untouched morally, falls down a pigmy before this magnitude of mathematical citations, for, by lack of comparison of "infinitude" with "finitude", the former becomes a Prometheus and he, himself, is untouched by the moral angle of existence. The miser hoards his gold and becomes obsessed thereby, but what leanness of soul awaits a civilization that fritters away its moral progress in its mad rush for wealth, power and aggrandizement? What also of the individual who has sold the same birthright while searching out a knowledge of the evolutionary processes of nature in the eons from amœba to men, unless his perspective be balanced by an apprehension of man's moral ascendancy? The rational man never can come to his moral inheritance under some law of force, evolutionary or otherwise, to determine his course for by such a law the animal alone would be his final goal and he would be subjected by his instincts to bowing down to sacred bulls and calves, and a whole line of the zoological order after the manner of the ancients of Egypt.

From the historical point of view we know that each civilization of the past has left the intelligence of the "rational man" unsatisfied. The instinctive man is moved by the poetry of the living world of the Greeks, and at the same time marvels at the magnitude of knowledge gained by the search of subsequent civilizations as worshipers of the "infinitude." Of what import is this to the rational man if the opposite view of the "finitude" is not acknowledged? All through the centuries there has been dissention between these two conceptions of thought when viewed diversely rather than as parts of a whole. And again it can be shown that separately, these two systems of thought known historically as the Classical and the Romantic conceptions, while both of wisdom, have fallen below the moral plane in history. We know that the Greek, with all his Classical wisdom of the "finitude" or "limited", by bowing down to the unknown God failed in the moral angle.

Neither can the Romanticists of the "infinitude" or "unlimited" point the way. For as Herbert Spencer has said, "Philosophy dealing with evolution, not with origination of things, can not throw any light upon the great cosmical mysteries of the beginnings and endings of life." Here the mind is baffled and thus are we brought again to the Greek, wherein the evolutionary philosophy of the Romanticists bows with the Greek to the unknown God. We, therefore, find that both the Grecian and the Romantic civilizations in their histories testify to the fact, as chronicled by one who lived before their civilizations dawned, that the psychical man cannot know God. Listen to the words of the Preacher of Israel, "Consider the works of God, for who can make straight that which He hath made crooked?" And again, "In the days of prosperity rejoice, but in the days of adversity consider; for God hath set the one over against the other, to the end that man should find nothing after him."

We have presented this foreword in order that the most brilliant gem within the purview of man, namely, Integrity of Mind, might have its setting.

The worthy physicians, founders of the West Virginia Medical Association, whom we honor today, have passed from the realm of which we have cognizance; they are, as we say, dead. The physical forms, the temples that were theirs, have been consigned to dust. But to the philosophic mind there is nothing dead in the universe; that which we call dead is only changed, its forces working in inverse order. The fallen leaf that lies rotting in moist winds, says one, has force still, else how could it rot? The thing that lies isolated, inactive in nature, can nowhere be found; seek everywhere from the granite mountains—slow mouldering since creation—the passing cloud vapor, the living man, the action, to the spoken word of man. The word that is spoken, as we know, flies out irrevocably and irresistibly; we have heard it

through the ether for thousands of miles. Not less, but more, is this true of the action that is done. "The gods, themselves," sings Pindar, "cannot annihilate the action that is done. Once done it is done always, cast forth into endless time, and long conspicuous or soon hidden, must verily work and grow, forever there; an indestructible and new element in the infinite of things."

Can we not see in this some intimation of immortality? Are the white tombstones of these dead physicians rising there in the distance but pale receding milestones set up to remind us how many toilsome and uncheered years we have journeyed on without their help and council? Or are the lost physicians who have left us still mysteriously here, even as we are mysteriously here, with the Infinite? We must know, of a truth, that only the Time—shadows of things have perished or are perishable; that the real Being of whatever was and whatever is, and whatever will be, is even now and forever. Should this thought by any means seem new? Let us ponder it at our leisure for twenty minutes or twenty years; believe it we must, understand it we cannot.

Infinite is the help that man can yield to man. These worthy physicians—these fathers in medicine—in their daily lives, in their ministrations to their fellowmen, had learned that which neither Nature nor Death can know, and having learned Mercy, their lives among men were governed accordingly. Without regard for position or possessions, their hearts went out to afflicted humanity and their hands stretched forth to alleviate suffering and stay the progress of the Grim Reaper with all the ability they were able to command. Their acts of kindness and deeds of generosity were impossible to recount. It suffices to say that, as physicians, their lives were open books known and read by all men. The works they wrought live after them. It is impossible that either time or eternity should blot them out.

The Apostle exclaims in his letter to the Corinthians, "And now abideth Faith, Hope, and Love; these three, but the greatest of these is Love." To the true physician, faith is the one thing needful, faith in the Infinite and in his fellowman. With faith, martyrs, otherwise weak, have endured privation, shame and death, and without faith, worldlings innumerable, have been wont to puke up their sick existence by suicide in the midst of pleasure and plenty. Man's life, properly speaking, is based upon hope, he has no other lasting possession but hope. This world of his is most emphatically the place of hope. The stature of the physician may be measured by his ability to inspire hope. Was it not to preach forth the doctrine of love to their fellowmen that sages and martyrs, poets, priests and physicians have in all times spoken and suffered bearing testimony through life and through death to the God-like that is in man, and how in the God-like, only man has strength and freedom?

How often has the physician on some midnight errand of mercy lifted his eyes aloft and gazed with awe into the silent firmament, that Temple of Immensity and Palace of the Eternal, whereof our sun in all its splendor, is but a mere porch lamp? Or again looked upon the stars of heaven and thought how they gazed down with pity from their serene spaces like eyes glistening with heavenly tears over the little lot of man? Thousands of human generations, all as toil worn as our own, have been swallowed up in time, and there remains no trace of them any more; while Arcturus, Orion, and Sirius, and the Pleiades are still shining in their courses clear and young as when the shepherd first sang of them from the plain of Shinar.

That these fathers of medicine, these servants of humanity, should pass from among men while lamentable, was natural. They had, most of them passed the meridian of life. Apart from all Transcendentalism it is plainly a truth of sense, which even a dull mind can consider a truism, that human things are in continual movement, action and reaction working continually forward, phasis after phasis by unalterable laws toward pre-

scribed issues. The seed is sown, the plant springs up; given the summer blossoming there must follow the autumnal withering. It is so with the seed field, with societies, philosophies, governments, it is so with the life of man.

Man is a symbol of eternity imprisoned in time. Man is a mystery, the great inscrutable mystery of mysteries. He stands in the center of immensities at the conflux of eternities, eternity before him, eternity behind him. Frightful, indeed, to all men is Death. From of old it has been named King of Terrors. Our little compact home, of an existence wherein we dwell complainingly enough, yet as in a home, is passing into an unknown of separation, foreignness, and unconditioned possibility. We shudder at the thought, yet toward these dim, infinitely expanded regions, close bordering on the impalpable inane, the mind of the rational man—not without apprehension and perpetual difficulties—sees himself journeying.

Man questions, then, what should be his moral attitude, for neither the "finitude" of the Classic nor the "infinitude" of the Romantic world reveals the moral man. The Classic Greek forced upon his immortal Socrates the cup of poison hemlock. The Romantic world forced upon the divine Dante —who soared the heavens above, deviled the earth and plunged into Purgatory beneath in his "Divine Comedy", banishment from his native soil. Man of the modern world finds himself beset by an innumerable multitude of ready writers, romancers, singers, players, disputators and pamphleteers that would feign assume his spiritual guidance. Despite this magnitude of dissertations, exorations and explanations, that intangible something for which man in all ages has sought, escapes his perceptive powers.

"Man's life is a narrow vale," says one, "between the peaks of two eternities. He strives in vain to look beyond the heights. He cries aloud but there is no answer to his wailing plea. From the voiceless lips of the unreplying dead there comes no word. Yet, in the darkness of the stilly night faith sees a star, and listening hope can hear the rustle of a wing." But the soul of man transcends his intelligence, it abolishes both space and time; for the maker of all men and of all things stands ever behind us and casts his dread omniscience through us over all things. Thus may the spirit of man with its divine sponsorship front his destiny, having already the whole future in the bottom of his heart.

Listen to the inspired Wordsworth:

"Our birth is but a sleep and a forgetting!
The soul that rises with us, our life's star,
Hath had elsewhere its setting,
And cometh from afar;
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come
From God, who is our home."

Or again:

"Earth fills her lap with pleasures of her own
Yearnings she hath in her own natural kind,
And even with something of a mother's mind,
And with no unworthy aim,
The homely nurse doth all she can
To make her foster-child, her inmate man,
Forget the glories he hath known,
And that imperial palace, whence he came."

Turning again to the Preacher of Israel, "Then shall the dust return to the earth as it was, and the spirit shall return unto God who gave it."

STOP THINKING!

Dismiss thought and relax! If these two orders can be carried out completely, says Roy Temple House in the October *Hygeia*, any one can get to sleep without delay. His article, "The Technic of Sleeping," appears in this issue.

Sound living and generally good hygiene are also contributing factors to the courtship of Morpheus, he believes. Obedience to the first order, however, cannot be achieved by stubbornly declaring, "I will stop thinking!" One can stop it only as one might stop rowing or swimming when the intention is to float. Merely relax, mentally and physically. And this is an art which can be learned, he declares.

Regularity in the hour of retiring should be the keynote.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The development of tuberculous disease is determined by the interaction of bacillus and host, each of which has its inherent characteristics. The variables are so numerous that no one single factor can explain the protein forms of the disease. Yet general principles that govern the interplay are now fairly well known and help to clarify our knowledge of the pathogenesis of tuberculosis. Max Pinner outlined these principles at the recent annual session of the American Medical Association. The following abstracts are derived from this paper.

Development of Tuberculosis: The first infection is in the vast majority by inhalation and the first focalization is in the pulmonary parenchyma. The first infection causes two alterations in the host: allergy (altered tissue reaction) and a deposit of tubercle bacilli. Thereafter the body is potentially exposed to two different sources of further infection: reinfection from within the body (endogenous); reinfection from without (exogenous). Both mechanisms may occur but which mode of reaction is predominant is still a perplexing question.

Since lately much emphasis has been laid on the endogenous mechanism, without however belittling the potentialities of the former. The importance of exogenous infection is based essentially on statistics which show that tuberculosis is more frequently found in contact groups than in non-contact groups. These statistics, however, deal mostly with under-privileged communities. They do not answer the question as to whether living conditions, in the widest sense of the word, or exposure to an exogenous source of infection is the dominant factor in producing post-primary disease.

The reality of endogenous reinfection is proved beyond doubt by the frequent occurrence of foci in localizations that could not possibly be reached by direct exogenous reinfection, such as the skeletal system, the urogenital tract or the brain. It seems important to arrive at a proper balance between the two opinions, because it will determine the most successful method of case finding and appropriate measures in the prevention of the disease and it will guard against an alarmistic attitude that threatens to bring back the time when tuberculosis was treated in the pesthouse.

Allergy: The two essentially different types of lesions, exudative and proliferative are determined not by one condition, such as allergy or immunity, but by these conditions plus dosage of infection, plus constitutional characteristics, plus specific localization and so on ad infinitum. The essentials of practical importance that are known of allergy in tuberculosis can probably be expressed in two brief statements: 1. Allergy can be produced only by infection with (living or dead) tubercle bacilli. 2. Allergy accentuates and hastens the native tissue reactions against tubercle bacilli.

Pathologic Sequence: Out of the infinite variety of lesions that may occur in tuberculosis, a few may be selected to outline characteristic developments and into this general scheme practically all other lesions can be fitted somewhere. The earliest lesion is a tuberculous pneumonia which soon becomes surrounded by proliferative tissue changes from which a dense fibrotic capsule develops around the center, which in turn undergoes caseation and calcification. The mediastinal lymph nodes also become involved and rapidly undergo caseation. These combined lesions (primary complex) commonly retrogress without clinical disease, leaving unmistakable pathologic marks. In this stage the tuberculous infection remains in the majority of infected persons a scar, as it were. In some cases the parenchymal focus may progress by contiguous spread, causing extensive caseous pneumonias and excavations.

More frequently the parenchymal focus heals while the lymphoglandular focus smolders on for greatly varying periods, discharging at intervals bacilli into the lymph and blood stream; they may focalize anywhere in the body, causing bone lesions, urogenital disease, scattered lobular pneumonic foci usually in the upper portions of the lungs; or, if a massive discharge of bacilli from a liquefied caseous lymph node occurs, the result may be a generalized miliary tuberculosis.

Following the more or less complete healing of the primary complex, or subsequent to major or lesser manifestations of early dissemination, a latent period usually intervenes before tuberculosis in the adult develops. In many cases of early dissemination, no further clinical manifestations occur.

Reinfection: The typical pulmonary tuberculosis of adult life begins in most cases with a single, initially exudative, focus. There are essentially three mechanisms by which this clinically primary focus may develop: 1. A bronchogenic spread oc-

curs from incompletely health apical lesions, the remnants of foci produced by early dissemination. 2. Bacilli from a still active primary lymph node focus are discharged into the lymph stream, are carried into the blood stream and are filtered out in the lung. 3. Bacilli are inhaled from the outside. Regardless of the mechanism by which the new focalization takes place, the early lesion is a tuberculous lobular pneumonia, which is seen most frequently in the subapical region. This lesion is always unstable; it soon progresses or retrogresses. Demonstrable involvement of the regional lymph nodes practically never occurs. This exudative focus, the so-called Assman focus, or early infiltrate, or infraclavicular infiltrate, again is subject to all the potential developments: resorption, fibrosis, caseation, liquefaction, excavation. If a cavity develops, a frank and perilous source of bacillary dissemination is established, from which at any time new bronchogenic spread may occur. From this point on, bacillary propagation through preformed channels, and localized destructive lesions constitute the main character of the disease. Within the lung this means bronchogenic spread, and beyond its boundary it means ulcerative tuberculosis of larynx and intestine. Every new focus is likely to start with a pneumonic lesion which is in no way different from the first early infiltrate, except that, owing to the potential massiveness of the bacterial invasion, it may be quite large and rapidly destructive.

Progression and repair occur in succession or simultaneously, and the picture may further be complicated by hematogenous disseminations. The natural course of progressive pulmonary tuberculosis is, then, a series of bronchogenic tuberculous lobular pneumonias, which may heal or progress, fibrose or excavate; it is a series of pathologically acute phases of new focalizations and excavations, interrupted by periods of relative quiescence and partial repair. A patient with progressive pulmonary tuberculosis may finally die from progressive destruction of his pulmonary parenchyma; or, since repair is achieved principally by fibrosis, it becomes understandable that he may die eventually from the crippling tissue alterations that healing brings about.

Healing: Pathogenic considerations are incomplete without a discussion of the potentialities of healing. Part of this has already been mentioned. In brief summary, tuberculosis may, with some exceptions, heal spontaneously at almost any phase of its development. In order of frequency, spontaneous healing takes place (1) in the primary complex, (2) in mild early dissemination, (3) in the early infiltrate. Once a cavity has developed, with its imminent danger of bronchogenic dissemination and hemoptysis, the chances of spontaneous healing are much lessened and they decrease progressively with the hardening of the cavity walls and with the involvement of more tissue. Since all therapeutic measures in pulmonary tuberculosis, including collapse therapy, are directed toward establishing conditions more favorable to natural healing mechanisms, the foregoing remarks on spontaneous healing apply equally to healing under any form of rational therapy.

Pathogenesis of Tuberculosis by Max Pinner, M.D., Journal of the A.M.A., Aug. 15, 1936.

"That infinitely sad little person who through no fault of his own has been unable to find himself in his social environment and has not learned how to make friends or to keep the ones he does make . . . needs as much sympathy and help as the child who is physically handicapped." So saying, Motier and Raymond Fisher enumerate the reasons why a child may find himself maladjusted.

"The Lonely Child" is the title of the article in which the problem is dealt with; it appears in the October issue of *Hygeia.*

One type of the maladjusted child whose numbers are increasing rapidly in this country is the child of the unsettled family. The parents, whether from necessity connected with the father's occupation or from unemployment or merely from restlessness, move about so frequently that the children are lucky if they are permitted to finish a single school year in one place. Such children, because they are forced to adapt themselves so often to new people with different ideas and manners, seldom feel secure.

Sickness may deprive a child of the company and playmates he craves; for him a substitute or compensation is needed. Perhaps he can find an outlet in music or art. Some of the world's finest creative geniuses have developed from the ranks of lonely children seeking to find compensation for their social inadequacy.

Some of the most disagreeable children are in desperate need of understanding, and it is these who oftenest do not find it.

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THE JOURNAL issued on the first of each month. Entered as second-class matter January 1, 1926. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 24, 1919.

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PRESIDENT'S PAGE

THE HOSPITAL ASSOCIATION

The Hospital Association of West Virginia is holding its eleventh annual meeting at White Sulphur Springs on Friday, November 6, 1936, and I am pleased to take this occasion to wish the Association a successful convention. I trust that the Hospital Association has had another year of successful accomplishment under the presidency of Dr. E. F. Heiskell of Morgantown.

There are many things in which the Medical Association and the Hospital Association have a joint interest. For example, the "list" hospital situation in southern West Virginia, where, according to my understanding, certain hospitals dispose of both hospital and medical service at a fixed rate per month. It has been pointed out by many of my predecessors that we have no quarrel with hospitals for their method of disposing of hospital service, but we do oppose most vigorously the disposition of medical and surgical services by hospitals or by corporations of any kind.

On the eve of the Hospital convention, I hope this matter will come up for full and complete discussion and I trust that the hospital owners will find an equitable and satisfactory method to separate hospital service from medical and surgical service. Many of the old points of difference between the hospitals and doctors have been settled in the past few years. The only considerable point of difference that remains is the one mentioned above. Now that the Principles of Medical Ethics of the American Medical Association demands such a separation, it must be brought about.

Perhaps there are other problems just as difficult that will face the Hospital Association at White Sulphur Springs. If so, I hope such problems will be handled wisely and settled promptly by the capable men and women who make up this important and influential organization.

Charles G. Morgan

President

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COMPENSATION AWARDS

There is little or no therapeutic benefit in cash settlements paid to injured workmen who have traumatic neuroses, according to an investigation made recently by Carl Norcross, Ph.D., of the Rehabilitation Division of the New York State Department of Education. Results of the investigation have been published under the title "Vocational Rehabilitation and Workmen's Compensation" and the report is a follow-up study of 322 workmen's compensation cases throughout New York which were closed by a lump sum settlement of $1000 or more.

It has been generally accepted in both medical and workmen's compensation circles throughout the country, says the report, that a cash award would help to cure a neurosis. "A careful investigation made a year or more after the settlements has convinced us that the value of a cash award is vastly overrated," writes the author. "It is the settlement of the case, the actual ending of the litigation, which is of value. Whether the final compensation award is paid in one lump or extended through a number of installments makes little difference to the claimant's condition."

The investigation disclosed that 16 per cent of the men had lost a large share of their compensation through unwise expenditures. The men who had no losses were found to have dissipated their funds much more rapidly than they would have under an installment system. Both because there was found to be a wastage of compensation funds, and because there appeared to be no therapy in the settlements, the author has recommended that lump sum settlements be discontinued.

Dr. Norcross makes a number of recommendations for improving the handling of neurotic cases in the workmen's compensation rooms. He urges that cases be given a more prompt and careful handling. The average neurotic case is open in the workmen's compensation division for nearly three and one-half years, it is said, and much of the delay is unnecessary.

The author states that neurotic conditions grow as cases are delayed. He also points out the dangerous policy of permitting claimants to read their own medical reports, or to be present when physicians are testifying, especially in contested cases where there is a difference of opinion.

In New York a compensation case theoretically may always be reopened. The report suggests that it is a poor policy to let neurotic claimants know that when their money is spent that they may try to reopen their cases. The author believes that one of the evils of the existing New York system in non-schedule cases is that claimants must be willing to accept a lump sum settlement. After a fair offer is made, the neurotic claimant may procrastinate indefinitely by refusing such a settlement. Thus the case is delayed, and the patient's mental condition may become worse. The remedy suggested by the report is that the referee, acting on competent medical advice, fix a fair settlement and close the case, with the award being paid in bi-weekly installments.

To overcome any prejudice the claimant may have toward the insurance company, it is suggested that the money be paid to a State administered trust fund, which already exists in New York. The carrier could close the case on its books, and the claimant could be told his case is definitely closed but that he would get all his money, regardless of his state of health. The patient would not have to remain sick to get his award.

Provision is made for permitting the claimant to get an advance on his compensation for any necessary purpose, including rehabilitating himself on a farm or in a small business.

Copies of the report may be secured through the publisher, The Rehabilitation Clinic, 28 East 21st Street, New York City.

SICKNESS INSURANCE

The New York State Journal of Medicine, in its October 1 issue, advanced a new and effective argument against compulsory sickness insurance. The problem is tackled from a different angle to show that under any compulsory sickness insurance plan, the medical profession would not attract the best type of students. Hence there would be a resultant deterioration in medical service.

"During the various phases of historical times," say *The New York Journal*, "if we trace the trend of youth toward occupations, we find that when interesting and adventurous careers were closed to most walks of life except in the church, brilliant youth gravitated to the church. When adventure and army life held a lure under the Napoleonic influence, the brightest and best sought a marshal's baton in an army career. When, at the end of the nineteenth century, industrial development offered fame and fortune as rewards for initiative and courage to those who essayed those careers, intellectually adventurous youth gravitated to these fields. This period also saw the rapid and astounding developments in medicine, because here too, individualistic endeavor brought adequate rewards, and the medical career was both interesting and attractive. The same brilliant types were attracted to medicine as to the industrial fields of endeavor. In all these activities, men were their own master. They were much encouraged but not controlled by government agencies. In education the emphasis was on the development of the individual doctor, and none on anything else. Medical schools and colleges could successfully raise their standards of requirements for admission, and of curricula. To these schools came some of the best among our youth, and the institutions of learning could exercise their power of selecting the best of three. From this the public benefited by receiving better grade in medical service.

The country's educators should ponder on the problem that will confront them if the efforts of the protagonists of compulsory health insurance have their way, and such a form of delivering medical care to our people is thoughtlessly adopted.

What type of youth would be attracted to a medical career? After a difficult medical course of four years, and the necessary preparatory one, then the arduous postgraduate internship—to be qualified for what? A job, with a fixed income, with a definite number of assigned patients who, to follow the custom set in England, are not thoroughly examined even if there were time allowed to do it; fixed hours of work, perhaps a paid vacation, and at the end—a pension. A jobholder's career! A government employee with all that this implies!

Obviously such a system will attract quite a different type of men than was drawn into the present system, men who have won high renown and have given American medicine the high place it holds today.

Will not the emphasis in medical education also have to change? Will it not be necessary to train American medical officials rather than American doctors? We see a similar change in a trend in the field of nursing. Formerly all student nurses were educated alike, now there is a distinct change toward educating nursing administrators. Those who actually handle the sick have less arduous curricula to cover. Since the financial income will be greater among the medical administrators of the system than among those of the rank and file who handle the sick, medical education will soon alter to meet the demand of those who will seek careers, not as physicians to the sick, but as a part of the controlling bureaucracy set over the physicians. The colleges will give two types of education to meet the changed con-

ditions. Reasoned out further, it will become necessary to lower standards (as was done in Russia) to attract sufficient numbers to meet the needs of the so-called lower branches of the medical system. Lower standards, reduced entrance requirements, and a totally different type of individual will be found taking up a medical career. And all this is proposed "for the betterment of mankind!"

We, who are opposed to compulsory health insurance, call to the attention of our educators these thoughts, for we are deeply concerned with the *quality* of medical care our community will receive. For it we desire only the best quality of medical care obtainable, delivered by a man or woman of the highest type.

The medical educators of our country have here a responsibility that they must continue to carry. In the discussions of the pros and cons of compulsory health insurance, obviously it is not an economic problem nor is it wholly a sociological question. It is a problem with which the educators of our youth are also concerned. Medical education must be planned to the end that we may maintain what we have laboriously won — a lower death rate, and a lower morbidity rate than any country where compulsory health insurance is in force, and a level of preventive medicine not equaled in any of the countries of Europe whose example we are so blithely urged to follow.

THE GARNISHEE AMENDMENT

Professional men, and particularly doctors, will no doubt be interested in the proposed garnishee amendment to our State Constitution which will be voted upon at the general election, November 3. As the purpose of the amendment is not widely known, and as it is of interest to every doctor in private practice, perhaps a word of explanation might not be amiss.

The purpose of the proposed amendment is to make possible the attachment and garnishee of wages and salaries of persons on our State payrolls. At the present time, State employees are exempt from this procedure. The amendment adds to Section 35 of Article 6 of the Constitution that "any officer, agent or employee thereof, (employee of the State) may be made defendant in any garnishment or attachment proceeding as garnishee or suggestee."

Proponents of the amendment point out that employees of private industry and of cities and counties are subject to garnishment and that there can be no good reason why people employed by the State should be in any preferred position. It is claimed that they should be subject to the same laws as other citizens. It is further pointed out that business and professional people are helpless to collect just debts from State employees if these employees care to ignore such debts.

The amendment will appear on the bottom of the official ballot at the general election. Those in favor of the amendment should vote "for ratification."

THE DOCTORS PAY

EDITOR'S NOTE—The following note, sent out to his patients by Dr. C. H. Maxwell, needs no further comment from the Journal editors.

"Why don't you get a new car?"

I reply: "This does all I get to do, and five times as much as I get paid for. It has attended 328 deaths and 1,760 births, and still going strong. Why go in debt for another?"

A 270; B 1155; C 809; D 573; E 150; F 473; G 471; H 950; I 34; J 434; K 340; L 399; M 1323; N 196; O 99; P 519; Q 7; R 577; S 1405; T 380; U 41; V 75; W 838; Y 32; Z 45 == 11,623. (All are there but Xerxes and Xenopira) Who? The people that owe me, alphabetically arranged. See why?

There was not a doctor in Tucker County when I was a child. The sick were held in reverence almost. Every possible care was given him, no matter if he was a bad citizen when well. This was a fetish among the scattered inhabitants. This was the atmosphere in which I was raised. This was the

same attitude which was preached in the medical schools — that the sick should receive the very best of care — pay or no pay. This was my training all through early life and in the medical schools. I followed out this teaching religiously in my practice. I thought I was spending my life for the good of others. Lately my eyes have been opened, and I see that this teaching is wrong and un-American. It teaches people to expect first class service with no obligation to pay. I have imposed this on thousands and thousands, and they have had their independent manhood and self-reliance undermined, and their lives have been made worse instead of better. This stigma will rest on my name long after my bones have returned to dust. "The evil men do lives after them. The good is often interred with their bones."

—C. H. Maxwell, M. D.

COMPULSORY VACCINATION

At the Fairmont meeting last June, the Association's House of Delegates voted its approval of compulsory vaccination for children before entering the public schools. The House of Delegates did not instruct the Legislative Committee to sponsor compulsory vaccination legislation, but it placed the Committee in a position to support such legislation if sponsored by some other group.

In past years there has been definite agitation for such legislation and it now appears as if the West Virginia State Health Department will present a bill on compulsory vaccination at the next regular legislative session. The Health Department favors this legislation because compulsory vaccination laws are already upon the statute books of most of our neighboring states.

Coming from the State Health Department, and under instructions from our own House of Delegates, our Legislative Committee can well give its influence and support to this proposed legislation. We feel that the prospect of getting such a bill through the legislature is considerably brightened by its health department sponsorship. If sponsored by the Association itself, then opponents of the measure would raise the customary cry that it was designed to benefit the medical profession rather than the public health.

Doctors who are interested in compulsory vaccination might do well to talk the matter over with their respective members of the legislature. If any doctor should encounter any opposition on the theory that the proposed measure might benefit the medical profession, please point out that it would be decidedly to the financial advantage of the profession to oppose such legislation. Certainly if the profession opposed immunization against smallpox, typhoid, diphtheria and other preventable diseases, there would be worlds more work for the physicians to do.

DR. FULTON HONORED

Dr. W. S. Fulton of Wheeling, president-elect of the West Virginia State Medical Association, was elected a member of the Board of Governors of the American College of Surgeons at its Philadelphia meeting on October 22. His term will run for three years. Dr. Frederic A. Besley, Waukegan, Illinois, was elected president to take office next year, succeeding Dr. Donald C. Balfour of Rochester, Minnesota.

STATE HOSPITAL MEETING

May we take this occasion to wish for the Hospital Association of West Virginia a most successful annual convention at White Sulphur Springs on November 6. We understand that a splendid program has been arranged covering the various phases of hospital administration, medical direction, management and nursing service. A record attendance is expected.

The morning session at White Sulphur Springs will be divided into sections for discussion of the problems which confront the various divisions of hospital management. The afternoon will be given over to Association business and general organization discussions. The annual banquet and dance will be held that evening.

COUNTY SOCIETY NEWS

BROOKE COUNTY

The Brooke County Medical Society met on Tuesday evening, September 29, in Wellsburg with 10 members in attendance. The election of officers was held and Dr. Ray C. Otte, who has served as secretary for the past several years, was elected president. Dr. W. L. Simpson was elected vice president and Dr. W. T. Booher was elected secretary-treasurer.

W. T. BOOHER, *Secretary*.

CABELL COUNTY

Dr. R. M. Wylie of Huntington was elected president of the Cabell County Medical Society at the opening fall meeting on October 8. The meeting was held at the Hotel Pritchard with Dr. Charles G. Morgan of Moundsville, state president, as the guest speaker.

Other officers elected by the Cabell society were Dr. F. O. Marple, vice president; Dr. Chauncey B. Wright, secretary; Dr. Edwin J. Humphrey, treasurer and Dr. James Klumpp, censor. Delegates to the 1937 meeting will be Dr. Hallock Moore, Dr. William Strange, Dr. Raymond Sloan and Dr. F. C. Hodges. Alternates will be Dr. W. C. Thomas, Dr. A. R. Lutz, Dr. W. Beckett Martin and Dr. F. O. Marple.

Dr. Morgan's address was on the subject, "State Medicine; Some Antidotes." This was a very interesting and excellent discussion of our own state problems. Following Dr. Morgan's address, a buffet supper was held in his honor.

CHAUNCEY B. WRIGHT, *Secretary*.

HARRISON COUNTY

The Harrison County Medical Society acted as host to the Tri-County Society on October 1 with a good representation of doctors from Harrison, Marion and Monongalia counties. The meeting was held at the Stonewall Jackson Hotel, Clarksburg.

The speaker for the occasion was Dr. L. Clarence Cohn of Baltimore and his subject was "Diagnosis and Treatment of Cancer." His talk was illustrated with lantern slides. Dr. Cohn's presentation was most interesting and practical and brought out a liberal discussion from the members in attendance.

CREED C. GREER, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel on the evening of October 13 with Dr. Ray Kessel, president, presiding. The essayists were Dr. A. Seletz and Dr. Howard A. Swart, both of Charleston. Dr. Seletz gave a paper on "Relationship of Nasal Accessory Sinus Infections to Certain Obscure Chest Involvements." Dr. Swart's subject was "Internal Derangements of the Knee Joint." Both papers were able and effective and brought out much discussion.

During the business session which followed the society voted authority to its Advisory Committee to confer with employees of the Libbey-Owens glass plant on a pre-payment plan for medical and surgical attention when confined in local hospitals.

P. A. HALEY, *Secretary*.

McDOWELL COUNTY

The regular monthly meeting of the McDowell County Medical Society was held at Welch on the evening of September 9, with a good attendance. During the business session, Dr. C. I. Butt, Jr., of Jenkinjones was admitted to membership.

The address of the evening was given by Dr. W. Carl Kappes of the staff of the C. and O. Hospital, Huntington. His subject was "Endocrinology" and his paper was liberally discussed.

R. H. EDWARDS, *Secretary*.

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held at the West Virginia Hotel on September 24, 1936, at 8 p. m. Dr. Frank Holroyd, vice president, presided.

The guest speaker of the evening was Dr. James King of Radford, Virginia, who presented a paper on "Fever Treatment of Paresis." This proved to be a very interesting paper. The discussion that followed was led by Dr. A. H. Hoge.

Following Dr. King's paper, a five reel moving picture on "Mechanism of Heart Beat" was shown.

There was a large attendance at this meeting, with a number of visitors.

CHARLES T. ST. CLAIR, JR., *Secretary.*

MONONGALIA COUNTY

Dr. F. R. Whittlesey of the University Health Service was the scientific essayist at the October 6 meeting of the Monongalia County Medical Society which was held at the Ortolan. Dinner was served at six o'clock after which Dr. Whittlesey spoke on "Recent Advances in Internal Medicine." This was a very interesting paper and was discussed by a number of members in attendance.

After the meeting the members were guests of the C. and P. Telephone Company at its High Street offices.

G. R. MAXWELL, *Secretary.*

OHIO COUNTY

The first fall meeting of the Ohio County Medical Society was held at the Ohio Valley General Hospital on the evening of September 25 with an excellent attendance. During the business session Dr. C. A. Wingerter was elected to honorary membership. The following doctors were elected to membership: Dr. Harry A. Smith, Dr. Daniel T. Fieman, Dr. Robert W. W. Phillips and Dr. C. J. Holley.

At the request of the West Virginia Bar Association a medico-legal committee was appointed with Dr. R. J. Reed, Jr., as chairman. Mr. J. S. Tate spoke briefly on the Community Fund. The secretary announced the installation of a public address system for all society meetings.

The speaker of the evening was Dr. Walter Simpson, Director of Diagnostic Laboratories, Miami Valley Hospital, Dayton, Ohio, on the subject, "Progress in Artificial Fever Therapy." Dr. Simpson reviewed the development of the various types of mechanical apparatus now in use for the production of artificial fever. He outlined the various types of disease in the treatment of which this form of therapy is fairly well established. He particularly warned against the general use of such apparatus without sufficient training or experience. Dr. Simpson's paper was discussed by Dr. D. A. MacGregor, Dr. H. G. Weiler, Dr. J. H. Kerr and Dr. Robert Snyder.

The presiding officer, Dr. Robert Armbrecht, introduced Dr. W. S. Fulton to the society as president-elect of the State Association.

The second regular scientific meeting of the Ohio County Medical Society was held on the evening of October 9 at the Ohio Valley General Hospital with 46 members in attendance. Dr. Robert Armbrecht, president, presided. During the business session, Dr. A. J. Noome was elected to honorary membership.

The scientific paper of the evening was presented by Dr. Isaac Bigger, Professor of Surgery at the Medical College of Virginia, Richmond. Dr. on October 1 with a good attendance. Dr. H. H. Veon, president, presided. Following a short business session, Dr. Berlin B. Nicholson presented a report of a young woman giving a history of recurring attacks of severe pain in the right flank and attended with certain psychoneurotic manifestations. Examination and operation revealed hypoplasia of the right kidney, which also had a double type pelvis and ureter.

Dr. William B. Morrison, Columbus, Ohio, then gave a very interesting and instructive paper, illustrated with lantern slides, entitled "Diagnosis and Treatment of Carcinoma of the Stomach." The slides illustrated some very unique operative Bigger discussed the diagnosis, treatment and prognosis of suppurative endocarditis. He pointed out that this is an infrequent but not a rare disease and that the diagnosis would more often be made if the possibility were kept in mind. He stated that it was particularly apt to follow osteomyelitis, empyema and pneumonia. Methods of approach in this infection were discussed in detail.

W. M. SHEPPE, *Secretary.*

PARKERSBURG ACADEMY

The Academy of Medicine of Parkersburg met in the staff room of the Camden Clark Hospital procedures. The paper was very ably discussed by Doctors Harris, Bronaugh and Matthews.

Dr. Frank W. Harrah, also of Columbus, then presented an instructive paper on urology entitled "Pain in the Abdomen from the Standpoint of the Urologist," illustrated with slides. His one impassioned plea was for a more careful investigation, from a urologic standpoint, of those cases which were not clearly of a non-urologic nature. Only too often the obscure case is subjected to various unnecessary surgical procedures before finally being referred to the urologist for a complete urologic investigation.

BERLIN B. NICHOLSON, *Secretary.*

FROM OTHER JOURNALS

CAESAREAN SECTION BEFORE CAESAR

The operation of removing a living child from the womb of its dead mother was known to many ancient peoples including the Hindus, Hebrews and Romans. In ancient Rome such a procedure was required by law. In 1608 the Senate of Venice enacted a law imposing a severe penalty for failure to carry it out. It was not until 1500 A. D., however, that a Swiss sow gelder, Jacob Nufer by name, performed the first successful Caesarean operation upon a living mother. The patient was his wife and she later bore other children. Before the century was over Francis Rousset was able to collect no less than fifteen successful cases.

In a recent issue of the *Canadian Medical Association Journal*, John and Herbert Couch show that Julius Caesar was not born in this fashion, though until now the derivation of the phrase "Caesarean section" has been explained on the basis of this traditional fallacy. We have Pliny's word for it that "The first . . . of the Caesars (a grandfather of Julius) was so named, from having been removed by an incision in his mother's womb. For a similar reason, too, the Caesars were called by that name." Froude, the historian, tells us that Aurelia the mother of Julius Caesar did not die at his birth, as would have happened had her son been delivered in this manner. Caesar often referred to his mother and she lived in his house until she died in maturity. The first of the family, Sextus Julius Caesar, lived in Sicily about a hundred years before the birth of Julius. It was, therefore, this Sextus, and not Julius, who was delivered by incision into the womb of his dead mother,—from which it appears that a famous Roman family was named after the operation and not the operation after the family.—*Virginia Medical Journal.*

THE UNQUALIFIED DRIVER

The medical profession as a whole depends upon the highways as a means of travel. It would follow, therefore, that as a body we should try to lead all other classes in endeavoring to make our thoroughfares more safe.

The automobile manufacturer will continue to make new cars, and these cars are going to be sold. It takes a long time to wear out the modern car, yet the ever increasing automobile graveyards we see in every city and town are evidence of what is really happening — our highways are becoming more congested each year.

We are apt to take driving too much for granted, an inherited trait as it were, an evidence of our advancing racial ability.

In spite of the painstaking and continual teaching of careful driving, we see the death rate and number of injured increasing each year.

The estimated loss of life this year will be near forty thousand with a million and a quarter disabling accidents. At this rate, it means that one out of every twenty in the United States will be killed or injured in an automobile accident in the next five years. It is from these statistics that it ought to be our personal problem, because it means one out of twenty in our family or relatives, one out of twenty of our social associates, or one out of twenty of our colleagues will meet death or will be injured within this time by an automobile.

As a professional problem, this condition ought to be included in our program of preventive medicine. By wholehearted coöperation with our local, county, state and national safety councils, much I am sure can be accomplished. Man has been able to decrease the death rate and prolong life from disease in many instances, surely we ought to be able to solve this new menace to life.

The engineers have their problems with roadbeds, crossings, types and kinds of automobiles. The courts have their problems with traffic violations, such as careless and drunken drivers, but I believe the unqualified driver in the majority of cases is the problem of the medical profession.

Every one of our profession knows individuals who through nervous lesion, cardiovascular conditions, eye conditions with impaired vision and various other diseases, make them road hazards. We have no way at present to stop them from driving, but I believe much can be done at present by explaining why they should not drive. This I am sure will have to be done by proper legislation in the near future, but, until this time, let us not lose our sense of individual and collective responsibility to the public.—*Wisconsin Medical Journal.*

FOREIGN DOCTORS IN GERMANY

The new regulation for medical practitioners in Germany delineates the position of foreign medical men sharply. To begin with, the following condition is new: The Minister of the Interior may permit a doctor who has qualified abroad to practice in Germany. This permission is subject to with-

drawal. These doctors have the same rights and obligations as those who have qualified in Germany. They are equal in every respect and can, without further formality, use the title of doctor. They are, however, at the same time obliged when practicing their calling to designate themselves as Aerzt. They are not allowed to add a foreign medical title or anything else which would go to show that they have qualified abroad.

There is a second category of such physicians, namely, those who are summoned in individual cases to a consultation or for medical treatment. This concerns mostly celebrated foreign specialists, and they may practice their medical profession without the permission otherwise required. This rule is based on the fact that, on one hand, it may be an emergency case; on the other, it is reciprocal, as other countries do the same for German doctors.

"Frontier doctors" form a third category, i. e., those whose work lies along the frontiers of the German State. For them the agreement drawn up between Germany and their respective countries hold good. By reason of the said agreements they may practice in the border districts. The frontier doctors have the rights and duties of those mentioned in category I, insofar as that coincides with the interstate contracts; for the rest they have the same status as the doctors in the second category.—*Medical Record.*

TRIED ON NERO

A recent news story in the *New York Times*, commenting on the increasing attention being paid in medical circles to the therapeutic possibilities of snake venom and on the extraordinary potency of the Russian viper's venom in particular, a million-million-millionths part of which is effective as a coagulant, reminds us that the facility of snake poison to arrest hemorrhage is not a modern discovery since it was known and tried in the ancient world. It directs attention to the fact that a Roman emperor, "the profligate and cruel Nero" to be exact, somewhere about the year A. D. 60 experienced an alarming hemorrhage which the court physician successfully arrested by the application of viper toxin.—*Virginia Medical Journal.*

MEDICAL STABILITY

Legislation that advocates a bureaucracy to control and dominate the members of the medical profession to the extent that such bureaucracy determines the personnel of a physician's clientele and the fee he may charge regardless of the qualifications obtained and the specially skillful service rendered spells the beginning of the end of scientific medical service for the people.

It is just as unamerican for a bureaucracy to determine a medical clientele as it would be to determine the clientele of a butcher, a baker, or a candlestick maker. There is no difference in the application of the principle.

The physical welfare of our people was never so well taken care of as now. Preventive medicine has made tremendous progress and is the outgrowth of work accomplished by the organized medical profession.

Unfortunately the medical profession is confronted with numerous enemies without and a liberal sprinkling of traitors among its own ranks. A great number of men and women who have been bitten by that fatal parasite, the upliftus putrifaciens in the guise of uplifters, are seeking to eliminate the doctor by crushing his individuality, hampering initiative and hoping thereby to accomplish destruction to scientific medical progress, by attempting to divert the practice of medicine into untrained and incompetent hands, which will bring about, as it has done in other countries, the worst imaginable form of medical service.

The wolf at the doctor's door is about to catch by the throat the entire medical profession. Hidden under the cloak of State medicine, compulsory health insurance, national socialization of medicine and sundry other acknowledged offspring of radicalism and cheap politics, only a small percentage of physicians have guessed the evil for what it is.

Those doctors who are awake to the dangers threatening the procession, realize that unless radical action is accomplished speedily, the doctor will find himself deprived of the privilege of continuing his present occupation.

In recent years the economic status of medicine has been practically turned inside out. *Figuratively speaking the physician has become a civic nonentity. Politicians have arrived at the state where with their business eye they regard a physician as "being in the world but not of it."* Neither politics nor "big business" has hesitated to take advantage of this condition. Considered an "easy mark" to begin with, these interests proceed to make us "the goat" and endeavor to classify us as the cheapest of cheap labor. For years the medical profession has furnished the most servile of hired men for corporations and the great insurance companies. Now the pro-

fession is in a fair way to serve them even more servilely as vassals of the state.

As we have repeatedly said in previous years in the columns of this journal three curses are operating to the detriment of the government stability at the present time, they are: autocracy, bureaucracy, and bolshevism. Not centralization of more power at Washington is wanted but decentralization of that now existing there would go a long way to help remedy existing social ills. The present trend towards centralization of power in this country is raising an army of politicians and bureaucrats all of whom must be supported by general taxation of the people.

As a result of increase of bureaucratic dictation Americans are today the most ruled and standardized people in the world, and we are building up armies of citizens to enforce all the laws; by and by we shall all be state and government employees, earning our pay by watching or spying on one another.

The tendency of the age is toward paternalism. Paternalism is doing for the man what he should do for himself. It is the continuation of childhood care for the adult. "Paternalism is the principle or practice of a government or governing bodies that undertakes to supply needs or regulate conduct of the governed in matters affecting them as individuals as well as in their relations with the state or governing bodies and to each other on the assumption that it can best determine and secure their highest welfare."

The shortsightedness is in the medical profession. The propaganda is seen creeping out in the advocacy of the wholesale treatment of the sick. The germ is in lay dictation as well as in corporation practice and likewise overcentralization of power in the hands of incompetent people who know nothing about medical problems.

Job work in medicine does not get the best results. This is illustrated in government work. The work is done neither as well or as economically as in private practice of business. The weak link in the chain in mass diagnosis and treatment of human ailments is the lack of personal responsibility.—*Illinois Medical Journal.*

TOBACCO AND ALCOHOL

As a rule, neither tobacco nor alcohol directly affect the eyes, unless they have first attacked the general health, it is pointed out by Dr. Emanuel Krimsky, of Brooklyn, N. Y., answering some of the questions which are most frequently asked by patients, in a recent issue of *The Sight-Saving Review*, quarterly journal of the National Society for the Prevention of Blindness (Summer, 1936).

"And yet," says Dr. Krimsky, "every eye specialist in every book on eye diseases gives prominent mention to blindness of varying degrees of severity from the prolonged and excessive use of either tobacco or alcohol in certain susceptible persons. It is extremely important to recognize blindness from tobacco or alcohol because immediate and complete abstention will often restore vision, unless the case has progressed too far. Wood alcohol blindness is permanent and cannot be cured."

The warning that a black eye may be more serious than funny is made by Dr. Krimsky as follows: "Among children—and sometimes among our alcoholic brethren—a black eye is regarded with honor, in the same sense that German students honor a scar on the cheek as evidence of duelistic prowess. If such an outward discoloration represented the whole story, we might have reason to laugh it away. But the inexperienced can see only skin-deep. It may be that the large majority of these cases can well survive the ordeal, even without having to go to a doctor. But that a certain number of these black eyes also show, on more careful examination, either a fracture of the skull or a hemorrhage into the eyeball with almost sudden blindness, is not generally known. It would seem reasonable, therefore, to submit all these eye injuries to medical examination, to avoid any possibility of permanent harm."—*Pennsylvania Medical Journal.*

LAWSUITS AND DOCTORS

In these days marked by lawsuits for alleged damages sustained while accepting the hospitality of a near relative, a close friend, or a passer-by with "good Samaritan" tendencies, it behooves the practicing physician to protect himself against the combined machinations of patient and attorney, which too often lead to the disturbing annoyance of threatened or actual suit for alleged malpractice.

Without attempting to convey the idea that formality is essential to suit-proof conduct of the daily practice of medicine, more thought, we are sure, must be given to the spread among our members of knowledge regarding the legal responsibility in-

volved in the *consent of a physical examination, an operation, or treatment.*

To this end we publish in this issue of the Journal, an article reprinted from *The Journal of the American Medical Association* by William C. Woodward, M.D., LL.M., Director of the Bureau of Legal Medicine and Legislation of the A. M. A. This article is authoritative, yet easily readable, with simple terminology and many subheadings, and might well be filed. It contains suggested release forms for consent to operation and to autopsy.

Medical Defense case No. 290, printed in the Secretary's report in the September *Pennsylvania Medical Journal,* had as its basis for suit lack of proper consent for operation, in spite of the use by the surgeon of a form of release routinely in use at the time in the hospital concerned.

We urge careful reading of Dr. Woodward's article. Its subject material concerns all practicing physicians.—*Wisconsin Medical Journal.*

DANGEROUS DAN M'CROBE

A bunch of germs were hitting it up
In the bronchial saloon;
Two bugs in the edge of the larynx
Were jazzing a ragtime tune.
Back in the teeth, in a solo game,
Sat dangerous Ack-Kerchoo;
And watching his pulse was his light of love,
The lady who's known as Flu.

—*Sundial.*

HEALTHY HEARTS

Contrary to popular opinion, athletics do not injure a healthy heart, says Dr. Allen S. Johnson in "Athlete's Heart" appearing in the October issue of *Hygeia.*

There is an old superstition that because a man gained athletic prominence during his college days he was doomed to an early death from heart disease, having literally "burned himself out." The fact that he attained such athletic prominence is strong presumptive evidence that he was originally endowed with a sound cardiovascular system. Today there are several limitations imposed by the schools, from the grades through college, which tend to hold the aspiring athlete well down to activity that does not overstrain him. Furthermore, careful preliminary examinations of all freshmen are the rule at most properly administrated colleges.

GENERAL NEWS

DR. SCHWINN HONORED

Dr. Jacob Schwinn, dean of Ohio county surgeons, was signally honored at the Ohio Valley General Hospital at Wheeling on August 19 when a bronze bust was unveiled in his honor. The bust was made by Howard Eccles Co., noted Philadelphia sculptor, and will be placed in the hospital lobby. The tribute was sponsored by the Jacob Schwinn study club of Wheeling.

The principal address was made by Mr. Thomas B. Foulk, hospital trustee. Other speakers included Dr. George L. Vieweg, president of the Jacob Schwinn Study Club; Dr. H. G. Little, vice president of the Ohio County Medical Society. In response, Dr. Schwinn traced the medical history of Wheeling back 50 years covering his period of active practice. With all the progress made during that time, he felt that medicine was still in its infancy. Dr. Schwinn also discussed war and its relation to the medical profession, and pointed out that there would always be wars until "we rid ourselves of agitators, politicians and social and religious strife."

STATE HEALTH CONFERENCE

The annual meeting of the West Virginia State Health Conference and the Health Officer's Conference was held at the Windsor Hotel, Wheeling,

on October 12, 13, and 14, 1936, with approximately 200 health workers in attendance. The Public Health Council of West Virginia met in Wheeling at the same time to hold examinations for licensure.

Among the outstanding national speakers on the program were Miss Josephine Roche, assistant secretary of the U. S. Treasury; Dr. R. R. Sayers of the U. S. Public Health Service; Dr. R. W. Atwater, secretary of the American Public Health Association; Dr. Sidney Goldstein of New York City and Dr. P. E. Blackerby of the Kentucky State Health Department.

West Virginia doctors and others on the program were Dr. A. E. McClue, State Health Commissioner; Dr. Thomas H. Blake, director of Maternal and Child Hygiene, and Dr. J. H. Crouch of the West Virginia Public Health Training School. Dr. W. S. Fulton of Wheeling, president-elect of the State Association, was toastmaster at the conference banquet.

CONFERENCE OF SECRETARIES

The annual conference of State Secretaries and Journal Editors will be held at the headquarters of the American Medical Association, 535 North Dearborn Street, Chicago, on November 16 and 17, 1936. A most interesting program of interest to all practicing physicians has been arranged and all doctors in good standing in their respective county medical societies are cordially invited to attend. The complete program follows:

Monday, November 16—10:00 A. M.

Call to Order. Rock Sleyster, chairman of the Board of Trustees of the American Medical Association.

Address. Charles Gordon Heyd, president of the American Medical Association.

Basic Science Laws. Mr. J. W. Holloway, Bureau of Legal Medicine and Legislation, American Medical Association.

The Michigan Filter System. L. Fernald Foster, secretary of the Michigan State Medical Society.

The Public Health League of California. Glenn Myers, Los Angeles.

12:30 p. m. Luncheon.

Monday, November 16—2:00 p. m.

Address. J. H. J. Upham, president-elect, American Medical Association.

The United States Public Health Service and the Social Security Act. Thomas Parran, Surgeon General, United States Public Health Service.

The Children's Bureau and the Social Security Act. Miss Katharine F. Lenroot, Chief, Children's Bureau, United States Department of Labor.

Practical Hints on the Preparation of Manuscripts and Illustrations. Richard M. Hewitt, Rochester, Minn.

Monday, November 16—6:30 p. m.

Dinner conference of editors of state medical journals. Holman Taylor, secretary-editor, State Medical Association of Texas, presiding.

Tuesday, November 17—9:30 a. m.

Insurance Against Alleged Malpractice. Mr. Thomas V. McDavitt, Bureau of Legal Medicine and Legislation, American Medical Association.

The Scientific Exhibit at Annual Meetings of State Medical Associations. Thomas G. Hull, Director, Bureau of Exhibits, American Medical Association.

Referred for discussion by House of Delegates: Consultation and correspondence with Bureau of Legal Medicine and Legislation. Violation of Laws Pertaining to Narcotics.

SOUTHERN MEDICAL TO MEET

The Thirtieth Annual Meeting of the Southern Medical Association will be held in Baltimore on November 17-20, 1936. The program has recently been completed and the general sessions, clinics and section programs offer material of wide interest. The Fifth Regiment Armory in Baltimore will house all groups and exhibits. As a medical center, Baltimore has unlimited attractions to offer its guests.

One of the features of the Baltimore meeting will be an "After Baltimore" cruise through historical points in Virginia and Maryland. A large number of the members and their wives have already made reservations for this cruise.

There will be 12 general clinical sessions at the Baltimore meeting, with 16 sectional meetings and six independent societies will meet conjointly with the Southern Medical Association. The scientific and technical exhibits will be open throughout the four day convention. Many papers and addresses are scheduled by the leading clinicians from all over the United States.

BOARD OF OBSTETRICS

The next written examinations and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in the various cities in the United States and Canada

on Saturday, November 7, 1936 and on Saturday, March 6, 1937.

The next general examination for all candidates (Groups A and B) will be held in Atlantic City, N. J., on June 8 and 9, 1937.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania. Applications for these examinations must be filed in the secretary's office not later than sixty days prior to the scheduled date of examination.

WOMAN'S AUXILIARY

CABELL COUNTY

The Auxiliary to the Cabell County Medical Society met at the home of Mrs. W. O. Grimm, Huntington, on September 14, 1936. Mrs. H. E. Beard was assistant hostess. Mrs. Grimm, president, conducted the meeting.

A general discussion of the coming year's work took place. A letter from Mrs. A. H. Stevens, state president, was read and many helpful suggestions contained therein were adopted by the Cabell Auxiliary for the coming season's programs. Printed booklets, containing the outlay of programs for the entire Auxiliary year, were distributed to the members.

Following the tea hour, the meeting adjourned until October 12, 1936, at which time the Auxiliary will meet at Mrs. W. C. Swann's residence.

MRS. EDWIN J. HUMPHREY, JR., *Secretary*.

FAYETTE COUNTY

The Woman's Auxiliary to the Fayette County Medical Society held a luncheon-meeting at the White Oak Country Club, October 15, 1936. Mrs. F. S. Harkleroad, president, presided. Twenty members were present.

Mrs. H. F. Troutman, of Page, W. Va., reviewed a work of Henry C. Link, Ph.D., entitled "Return of Religion." This was a most interesting topic.

Mrs. R. A. Updike, Montgomery, was appointed chairman of the Committee on Doctor's Hobbies for the 1937 State Meeting. Mrs. S. W. Price of Scarbro was appointed historian of the Auxiliary.

The next meeting will be held at the Woman's Club in Montgomery.

MRS. G. G. HODGES, *Secretary*.

MARION COUNTY

The Auxiliary met at the Fairmont Hotel, Fairmont, on September 29, 1936. Mrs. E. P. Smith, president, conducted the meeting. Twenty-four members were present.

Mrs. Philip Johnson spoke to the group on the subject "Social Relations." Mrs. Johnson's presentation was most interesting. Following the program a discussion of the plans for the coming year was held and the plans for the new program presented. Mrs. Stevens, state Auxiliary president, spoke to the members of some projects for the coming year.

MRS. J. R. TUCKWILLER, *Secretary*.

PARKERSBURG

The Auxiliary to the Parkersburg Academy of Medicine met on Tuesday, October 6, at the Wilmar Restaurant, Parkersburg. Mrs. Arthur Knott presided. Twenty-two members were present.

Mrs. S. M. Prunty, past president of the State Auxiliary, spoke interestingly of the last meeting of the Southern Medical Association Auxiliary. Mrs. W. R. Goff reveiwed an article from the last issue of *Hygeia*.

The Auxiliary is going to make a particular effort this year to place *Hygeia* in all schools and doctor's homes. A fine record has been established so far. It has also been decided to meet each month in a different place to add interest and a change to meetings.

MRS. BEN O. ROBINSON, *Secretary*.

McDOWELL COUNTY

The Auxiliary to the McDowell County Medical Society met on October 14, at the Appalachian Power Club Rooms, Welch, W. Va. Mrs. J. Howard Anderson was the presiding officer and nine members of the Auxiliary were present.

A general discussion of plans for the coming Auxiliary year were discussed. Ways and means of promoting the reading of *Hygeia* and also plans for the placement of this health magazine in all schools in the county were considered.

Plans for a dinner bridge were made for the entertainment of the husbands of Auxiliary members to be held November 13, in the Memorial Building in Welch.

The next meeting will be held in December at the above location.

MAUDE H. EVANS, *Secretary*.

THE WEST VIRGINIA MEDICAL JOURNAL

PUBLIC LIBRARY BUILDING, CHARLESTON, W. VA.

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ENTERED AS SECOND-CLASS MATTER, JANUARY 1, 1926, AT THE POST OFFICE AT CHARLESTON, WEST VIRGINIA

Vol. XXXII DECEMBER, 1936 No. 12

THE PRESENT STATUS OF THORACIC SURGERY*

By Russell B. Bailey, M. D., F. A. C. S.
Department of Surgery, Wheeling Clinic
Wheeling, West Virginia

One of the last frontiers in the field of surgery is within the thoracic cage and in the past ten years a great deal has been accomplished in the improvement of diagnosis and the standardization of operative procedures. As a medical student and as an interne in 1922 and 1923 I heard very little reference made to operations on the thoracic viscera. I am sure that most of you gentlemen had the same experience I had. In the State of West Virginia there is a total of 1,767 physicians and of that number only 391 have been graduated since 1925 so that it is not difficult for one to understand that unless we happened to be particularly interested in thoracic surgery or unless we come from one of the few clinics that are pioneers in this field, many of the developments in the surgery of the thorax would be missed. In 1925 John Alexander published his book, "The Surgery of Pulmonary Tuberculosis." Immediately following this publication many capable physicians began to investigate this virgin field. The American Association of Thoracic Surgeons, organized in 1917, was composed of men who were particularly interested in this field, and since then, their interest has been an inspiration that has resulted in the development of most of the modern methods of diagnosis and treatment. The problem of pulmonary tuberculosis was given a great deal of consideration and gradually, collapse therapy came into its own. At present, results in this field are very encouraging and we can look forward to still further advancement through refinements in diagnosis and technique. At the present time, our knowledge of the physiology and the pathological anatomy is gradually reaching a point of standardization, while the evolution of the operative technique will have been responsible, in a great measure, for the reduction of the morbidity and mortality in this group of patients.

*Oration in Surgery. Read June 9, 1936 at the meeting of the W. Va. State Medical Society, Fairmont, W. Va.

The chief technical procedures are as follows:

Bronchoscopy and esophagoscopy as a diagnostic and therapeutic measure have been well established by Chevalier Jackson and his school. When these procedures are carried out by capable men it causes very little morbidity and practically no mortality.

Pneumothorax as first suggested by Carson in 1820 and as first practiced by Forlanini in 1884 is a common procedure to all those dealing with pulmonary tuberculosis. The refinements in the technique and the standardization of its indications are well known and at the present time it carries practically no morbidity or mortality. Pneumothorax was first used solely as an aid in the treatment of pulmonary tuberculosis. Later it was extended to the treatment of other pulmonary diseases and as an aid to röentgenological diagnosis of tumors. At the present time, pneumothorax is very little used in nontuberculous infections of the lungs.

Pneumolysis is a term coined to describe the separation of the parietal and visceral pleura when pneumothorax is not satisfactory due to preexisting pleural adhesions. The use of pneumolysis is confined principally to the treatment of pulmonary tuberculosis. There are two types of procedures—extrapleural, where the pleural cavity is not entered, and intrapleural, where the pleural cavity is entered. Extrapleural pneumolysis was first used by Tuffier in 1891. It has been very highly developed over a period of years until at present the procedure consists of separating the parietal pleura from the bony chest wall and inserting a plumbage of paraffin, muscle or gauze which will maintain the collapse. Intrapleural pneumolysis consists of entering the pleural cavity to sever adhesions between the parietal and visceral pleura. This procedure is used as an adjunct to pneumothorax when adhesions prevent closure of the cavity. The operation may be done either by the open or closed method. The open method has been used for many years, but it has been for the most part, supplanted by the closed method of Jacobaeus of Stockholm and made popular in this country by Matson. The operation consists of severing the adhesions with galvanocautery, by introducing between the ribs a thoracoscope which is an offspring of the modern cystoscope.

Phrenic nerve operations introduced by Stuertz in 1911 for lower lobe tuberculosis and bronchiectasis are, at the present time, the most widely used procedures in thoracic surgery. Phrenic nerve operations are outstanding in the treatment of all forms of pulmonary tuberculosis whether employed alone or in conjunction with other therapeutic measures. These operations are used with other operative procedures when it is desired to reduce the volume of the thoracic cage. This method is occasionally indicated in nontuberculous suppurative lesions.

Extrapleural thoracoplasty was formerly devised to treat disease involving the pleural cavity. Its use has been extended to the treatment of diseases of the lungs. Fundamentally the operation has two objectives. In disease of the pleural cavity such as chronic empyema, the purpose is to obliterate the pleural cavity by bringing together the chest wall and the lung. The extent of the rib resection depends not only upon the size of the pleural defect but also upon the elasticity of the compressed lung. When extrapleural thoracoplasty is applied to apical or unilateral pulmonary tuberculosis, the objective is to produce selective collapse of the diseased area. This collapse is not due to external pressure, but it is brought about by the relaxation and the retraction of the diseased lung; the underlying principle being the production of selective rest similar to that in pneumothorax.

Thoracoplasty for pulmonary tuberculosis was first done in 1885 by DeCerenville of Lausanne, Switzerland. It was improved upon by Quincke, Spengler, Brauer, Wilms, and Sauerbruch. In America, the chief pioneer was Archibald of Montreal with more recent developments by Alexander and O'Brien. The modern thoracoplasty em-

bodies the following principles: first, extensive rib resection done in multiple stages; second, leaving behind the periosteum for the regeneration and development of a new, but small bony thoracic cage; and third, the removal of all of the first rib, first suggested by Alexander and O'Brien. The present type of thoracoplasty is used not only in tuberculosis but is also a supplement to the treatment of certain types of bronchiectasis. It is sometimes necessary after lobectomy and pneumonectomy.

Lobectomy: Lobectomy is the method of choice in the handling of chronic lung abscesses, certain types of bronchiectasis, many tumors of the lung, and rarely localized tuberculosis.

Lobectomy has had a slow evolution, principally due to failure in the closure of the remaining bronchi. In 1891 Tuffier was able to collect twelve successful cases including one of his own. Most of these were done for apical tuberculosis. Up until 1914, at the beginning of the World War, there had been approximately thirty lobectomies reported. The chief development in lobectomy started with Graham's introduction of the cautery lobectomy, the two-stage lobectomy of Alexander and the one-stage lobectomy of Braun's and Shenstone. Graham's cautery lobectomy consists of the exposure of the diseased lobe, the production of parietal and visceral pleural adhesions, followed by multiple stage destruction of the diseased lung with the actual cautery. Since severe hemorrhage was a common complication, the operation is being gradually supplanted by either the one or two stage lobectomy. The two stage lobectomy of Alexander's consists of the mobilization of the diseased lobe, and the production of adhesions between the parietal and visceral pleura of the remaining lung. The diseased lobe is then exteriorized after mass ligation of the pedicle. The lobe is thus allowed to slough away. The stump is always infected, so again the danger of secondary hemorrhage is always imminent. The one-stage lobectomy which is the most ideal consists of individual ligation of the vessels in the hilus and isolation of the bronchus with a careful closure. This method will probably supplant the other methods except for the ever present occasional case. These refinements in technique and the great improvement in anesthesia have been responsible for the drop in a mortality rate from almost 100 per cent, to between 15 per cent and 20 per cent. Early diagnosis and most careful selection of the case will, no doubt, continue to reduce the mortality and will place the procedure in the same class as the resection of the abdominal viscera.

Pneumonectomy: Pneumonectomy or complete removal of the entire lung has been the most dramatic operative procedure developed in many years. In 1923 Sauerbruch, while removing a large ganglioneuroma accidentally ligated the left main bronchus and ten days later the lung sloughed out. The patient recovered without a bronchial fistula. The first intentional pneumonectomy was done by Nissen in 1931 for bronchiectasis. The second complete removal for bronchiectasis was done by Haight in 1933. The first complete removal for carcinoma of the lung was reported by Graham and Singer in 1933 and shortly thereafter, Reinhoff reported a case. All these were left-sided pneumonectomies. The first right-sided pneumonectomy was reported by Overholt in 1934. At the present time, some forty to fifty successful pneumonectomies have been reported. The mortality rate is still rather high, but when one considers that the majority of these cases had either carcinoma or diffuse unilateral pulmonary suppuration and could not have lived for any great length of time, the results are most commendable. The present operative procedure consists of either an anterior or posterior approach with separate ligation of the pulmonary arteries and veins, and ligation of the main bronchus with careful non-traumatic closure of the mucosa. The thoracic cage left by the removal of the lung may become filled by the shifting of the mediastinum to that side, the compensatory

emphysema of the good lung, and the elevation of the diaphragm or organization of the aseptic exudate. It is too soon to know whether or not these cases will require a supplementary thoracoplasty to obliterate the existing pleural space. In children and young adults, compensation is rapid when there is no fixation of the mediastinum. Only time will demonstrate the final result in older people. Complete pneumonectomy is always indicated in carcinoma of the bronchus, extensive unilateral bronchiectasis, extensive chronic lung abscess and unilateral cystic disease.

At this point I would like to discuss briefly the modern treatment of the most common disease of the lungs and pleura.

Acute Empyema: Pus in the pleural cavity is, as a rule, secondary to some inflammatory change in the parenchyma of the lung. It is occasionally due to disease of the pleura and may be secondary to puncture wounds, or compound fractures of the ribs. There has been very little added to our knowledge of the behavior of empyema since the investigations following the great epidemic of influenza in 1918. The controversy between those who advocate closed drainage using many varieties of simple or complicated apparatus and those who advocate rib resection with open drainage as a primary procedure has, in a measure, abated. We know that both methods have their virtues and if used judiciously, good results will be obtained. Better practice dictates the use of both methods, varying only in degree according to the individual case. There are very few surgeons now who would even consider resection of a rib with open drainage in an acute streptococcic infection, but would resort to periodic aspirations followed by closed catheter drainage until the acute phase is passed. On the other hand, catheter drainage of thick pneumococcus pus is very frequently unsatisfactory and rib resection with a large drainage tube will often hasten convalescence. Coupled with either method, irrigation with the purpose of mechanical cleansing will often hasten reexpansion of the lung. Careful postoperative management will insure reexpansion of the lung and the avoidance of residual pockets.

Chronic Empyema: Chronic empyema is usually the result of a poorly treated acute empyema. In dealing with a chronic empyema cavity it is of great importance to determine the size of the residual cavity to ascertain whether or not a foreign body such as a piece of drainage tube or gauze is present. The presence of a non-communicating or walled-off pocket must, of course, be verified. The problem now is one of dealing with a very thick parietal and visceral pleura. Very little has been added to the underlying principle of bringing the lung and the chest wall together since the latter part of the nineteenth century when Estlander and Schede, severally advocated the excision of the thickened pleura and removal of the overlying bony part of the chest wall. It is true, however, that many refinements in the technical phase have developed.

Tuberculous Empyema: The treatment of tuberculous empyema has been greatly improved upon during the past few years. Repeated drainage of the pleural cavity by aspiration as a rule will give a good result. When this conservative method fails, extrapleural paravertebral thoracoplasty becomes a great weapon in eliminating this distressing complication of tuberculosis. Mixed infection, that is, infection containing both tubercle bacilli and some of the pyogenic organisms may be successfully treated by closed drainage, in conjunction with paravertebral and anterolateral extrapleural thoracoplasty.

Pulmonary Tuberculosis: In the treatment of pulmonary tuberculosis there is no specific therapy and one must be guided by the condition of the individual case. Rest still remains the keystone in the arch of therapy, and such rest as only a tuberculous patient on the cure knows—a rest so complete that it embraces, whenever possible, the affected areas. Local rest of the involved area may be obtained by many of the procedures just

described. In the more modern institutions, approximately 80 per cent of all patients are receiving some form of collapse therapy. This has shortened the period of the so-called cure to between one-third and one-half of the former time. Many cases at one time considered hopeless have been salvaged and these former patients returned to society as useful citizens.

Lung Abscess: Lung abscess is a most unfortunate and distressing lesion. It may be the result of the aspiration of a foreign body or secretions from the nasal pharynx. It is occasionally embolic from an operative procedure of a remote nature. Sometimes it follows an acute respiratory infection such as pneumonia. The bacteria which produce lung abscess, are the spirochæta, fusiform bacilli in symbiosis with a large group of the pyogenic strain. Most lung abscesses of the foreign body type will heal after removal of the offending object. Postoperative and post-anesthetic abscesses will often heal after the institution of postural drainage. Occasionally bronchoscopic aspiration and drainage are of value. There are some who believe that irrigation and iodized oil installation are of definite value. All lung abscesses of whatever cause should have the benefit of a rigid medical regimé which consists of adequate postural drainage with supportive measures before any type of collapse or external drainage is considered. Unfortunately, in many instances, the conservative therapy is prolonged, leaving a chronic abscess with multiple cavities and damage to the bronchi. Extensive pulmonary fibrosis invariably follows and a very sick patient is presented to the surgeon for treatment. The question of how long conservative therapy should be continued now arises. There is no definite period of time. It is reasonably safe to follow this procedure as long as repeated röentgenograms show the patient is improving and the abscess cavity is becoming smaller. On an average, an acute abscess should heal in approximately six weeks. This, of course, is subject to variation. When there is incomplete drainage associated with a systemic reaction such as fever, or loss of weight, it is dangerous to continue these conservative measures. Gangrene of the involved lobe will frequently follow if the proper drainage is not instituted.

Phrenic nerve paralysis has very little, if any, place in the treatment of an acute lung abscess. Pneumothorax has been used successfully in occasional instances, but it is fraught with many dangerous complications which render it a hazardous procedure. External drainage of the lung abscess is the best method and it can be most safely accomplished by the two stage thoracotomy. The first stage has as its objective the production of adhesions between the parietal and visceral pleura to prevent contamination of the pleural cavity. After these adhesions have formed, which is usually from four to ten days, the abscess is opened with the electric cautery.

Chronic Lung Abscess: Chronic lung abscess is often the result of a poorly treated acute lung abscess. The problem here is usually one of extirpation of the diseased lobe. There are some small basal abscess cavities which will close following phrenic paralysis, but these cases are unusual. There is an occasional central or hilar type of cavity which can be closed by pneumothorax providing one can get a free space, but it is always fraught with the danger of an empyema. Careful study of the diseased lobe by bronchography will often disclose multiple cavities with bronchial dilatation. When this is present, the only hope for a cure is by the extirpation of the diseased lobe. The removal may be accomplished by employing the Graham cautery, by lobectomy, or by multiple or single stage lobectomy, depending entirely upon the extent of the disease and the condition of the patient. If the entire lung is involved, total pneumonectomy is indicated.

Bronchiectasis: Bronchiectasis is a disease of the bronchi characterized by dilatation either cylindrical, sacular or both and associated with chronic suppuration and its attending sequelæ. Therapeutically it may be regarded as small multiple abscesses. Occa-

sionally one sees a dry bronchiectasis which may be discovered when searching for the cause of a pulmonary hemorrhage or repeated attacks of bronchopneumonia. The etiology may be divided into three groups: the first or congenital type is due to defects in the wall of the bronchi with a resulting dilatation followed by secondary infection. This type is amenable to therapy if unilateral. The second group is the sequelæ of a healed tuberculosis, silicosis, abscess or tumor. The cure of this group must of necessity follow the cure of the underlying factor. Often, however, the bronchi become the major issue, as in bronchiectasis associated with a healed tuberculous lesion. The third group, which is acquired, is secondary to the infection of the bronchial wall with resulting dilatation. This dilatation is the result of a negative intrapleural pressure, an increased intrabronchial pressure, with the accumulation of secretions causing a partial obstruction. As a rule, an accessory sinus infection is present and probably is the factor which keeps the bronchial infection alive. The treatment primarily should be postural drainage of the lung with upper respiratory tract therapy. Frequently a high, dry, and warm climate will be beneficial. When postural drainage is not effective, bronchial aspiration and irrigation may be of benefit. Phrenic nerve paralysis and pneumothorax are only occasionally indicated because many times they prevent proper drainage of the bronchi. Pathological specimens which have had compression by phrenic nerve operations and pneumothorax for many months, show no change in the bronchi. The only rational procedure is the removal of the diseased area by lobectomy or pneumonectomy. The only justified use for radical surgery is the failure of more conservative methods. When there is repeated hemoptysis, large amounts of foul sputum and recurring pneumonia that do not respond to the usual tactics, radical surgery is always advised. The operative mortality is being reduced and at the present time is between 15 per cent and 20 per cent. More suitable surgical cases will reduce the mortality rate. At the present time, only the extremely bad risks are referred for operation.

Tumors of the Lungs and Mediastinum: The mediastinum and lungs are subject to both benign and malignant tumors. In the benign group, dermoids, ganglioneuromas and bronchial adenomas are the most common. In the malignant group, squamous cell carcinoma of the bronchi predominate. In the mediastinum the primary malignant tumors are usually mesothelial in origin which are the spindle and round cell sarcoma, those arising from lymphoid tissue, thymona and lymphosarcoma. The benign tumors are often found in a routine examination and due to their slow growth they do not produce symptoms until they have grown to a large size or as in the case of a dermoid, they rupture into an adjacent bronchus. Benign tumors should all be removed because they will eventually produce serious damage. Their removal is comparatively easy and the mortality is low. Bronchial adenomas may be removed by the way of the bronchoscope. The malignant neoplasms of the mediastinum are not amenable to surgical removal and should be treated by extensive x-ray and radium therapy. Malignant tumors of the bronchi and lungs are fatal. They do not respond to radium or x-ray. As a rule they do not metastatize very rapidly and the primary hope is the total or partial removal of the lung.

Surgery of the Heart and Pulmonary Vessels: Wounds of the heart are relatively frequent in some sections of the country, particularly in the south among the Negro race. Rehn in 1897 was the first to attempt repair of a stab wound in the heart. A large number of these cases have been reported since that time. They must of necessity be operated upon soon after injury because death ensues in a fairly short time from hemorrhage into the pericardial sac. Suppurative pericarditis is often a complication of acute pulmonary infection and it should be treated by the open method avoiding the use of irritating solutions. Pericardial adhesions with embarrassment of the excursion of the heart muscle

often times results in signs of heart failure. Removal of the adherent or calcified pericardium often gives very brilliant results. During the past few years Beck of Cleveland has been attempting to supplement the ventricular blood supply in coronary disease by grafts of the pectoral muscle. While this is still in the experimental stage, reports thus far are most encouraging. An embolus in the pulmonary arteries is a most distressing and usually fatal accident. Operative interference must be very prompt and rapid if the patient is to survive. Kirschner of Berlin reported the first successful removal of a pulmonary embolus in 1924. The operation was started a few minutes after symptoms appeared and in four minutes he had the embolus removed. The patient recovered and was able to go home in some three or four weeks.

Esophagus: The esophagus presents a very difficult problem both from its position and its anatomical construction. Most benign strictures should be treated by dilatation either by esophagoscopy or by the use of a sound or bougie, using the swallowed silk thread as a guide. It is occasionallly necessary to do a gastrostomy for feeding, and for carrying out the dilatation. Plastic reconstruction with the formation of an extrathoracic esophagus involves long hospitalization, multiple operations and unfortunately a mortality of 20 per cent.

Diverticula of the esophagus are usually of the traction type and are most frequently located in the neck. Since this location is most accessible, they may be successfully removed by a two-stage procedure. The mortality is low. Carcinoma of the esophagus to date is for the most part a problem of feeding and the prolongation of life. Torek in 1913 successfully resected the thoracic esophagus for carcinoma. The patient was alive and well eleven years later. There are only a few successful cases reported in medical literature. Radium implantation has been disappointing. Dilatation with sounds after the patient has swallowed a string for a guide, is palliative and often will relieve the patient for several months. It is, however, attended with the danger of rupture and a subsequent fatal mediastinitis. A gastrostomy may prolong life by preventing starvation.

Conclusions: The rapid advancement in thoracic surgery has been made possible by more accurate diagnosis due to refinements in x-ray examination, by bronchography with its use of iodized oil and bismuth powders to localize the lesions, and by serial röentgenograms which show the progressive development of the disease. The rapid advancement in anesthesia has made many operations possible. The introduction of intratracheal and positive pressure anesthesia has simplified the opening of the chest wall. The refinements in the use of nasal oxygen, the oxygen tent and the oxygen chamber have gone a long way in the prevention of respiratory failure, when the vital capacity has been lowered to the borderline. The many physiological facts which have been discovered by experimenting on animals have been of invaluable aid to surgery. Early diagnosis which means the closest coöperation between the internist, radiologist, bronchoscopist, and the surgeon is the only way this group of patients will receive the proper medical care. Not wholly by *ipse dixit*, I have attempted to crystalize the most important and accepted operative methods in treating lesions within the thoracic cage. At this point I wish to emphasize the necessity and value of exploratory thoracotomy when a positive diagnosis cannot be reached otherwise, and especially is this true in suspected cancer of the lung. There is practically no morbidity or mortality associated with exploratory thoracotomy. At the present time the reduction in morbidity and mortality has been due to the refinements of technique and surgical judgment. When the public becomes more educated to the dangers of thoracic infections, prompt medical diagnosis and the institution of earlier treatment will, of course, reduce the morbidity and mortality associated with this branch of medicine.

CERTAIN ASPECTS OF AURICULAR FIBRILLATION*

By G. H. BARKSDALE, M. D.
Charleston, West Virginia

THERE is a general impression common to the most of us, that auricular fibrillation is a very definite thing and that it is unnecessary to be especially analytical as to its cause and workings, for digitalis is its sovereign remedy. Hence if the patient has been thoroughly digitalized one has done in effect all that is to be done. The purpose of my discussion this morning is to establish the fact that auricular fibrillation on the contrary is not a constant thing but a state of pathologic physiology occasioned by a variety of pathologic states and may exist in the complete absence of demonstrable cardiac or other pathology, and that it has no constant microscopic or gross pathology. Further it is to be emphasized by case briefs that digitalization is the sovereign treatment in auricular fibrillation though by no means the only valuable drug or measure at our command.

MacKenzie states: "No one appreciates the essentials in the recognition of heart disease and heart failure until he has made himself familiar with the varied phases of auricular fibrillation."

In simplest terms it may be said that auricular fibrillation is a gross cardiac irregularity usually occurring in a heart already diseased. Murmurs and thrills, if formerly present, tend to disappear. If the pulse is counted by one at the apex and by another at the wrist the counts will differ materially, depending on the frequency of the fibrillation. The difference between the two counts is known as the pulse deficit. The electrocardiogram is here unqualifiedly diagnostic. The condition is rare before twelve years of age, commonest in the twenties, next commonest in the fifties and sixties.

Cushney and Edmonds have stated: "The term auricular fibrillation describes an activity of the auricular walls in which fibres, or groups of fibres, contract without reference to other fibres or groups of fibres. The result is an incoördination of contractions with a consequent disturbance of rhythm with more or less loss of cardiac efficiency."

At the present time, it is believed that the disorganization of the auricular activity is due to a deficit in conduction, that there is a perpetuating ring of excitation located in the right auricle at the mouth of the superior vena cava, the so-called circus movement.—(Anderson). So much for what is taking place in the auricle; however the question naturally arises as to the cause of such behavior.

In Mohler and Lintgen's series of 220 fibrillating hearts, they found rheumatic fever to be the etiologic factor in 41 per cent of the cases; arteriosclerosis in 31 per cent; chronic nephritis, with or without hypertension, in 13 per cent; thyrotoxicosis in two and one-half per cent; syphilis in 1.4 per cent. While these figures are no doubt correct for Philadelphia and the northeastern coast, I am quite sure they would not be the same in West Virginia where the incidence of rheumatic disease is markedly less and thyroid disease markedly greater. In addition to the diseases mentioned, the toxins of pneumonia, influenza and diphtheria, drugs —digitalis, alcohol and tobacco may be added as possible causes. As informative as all this may be, one wonders why only about one-fourth of the rheumatic hearts fibrillate, why they rarely fibrillate at the height of the infection and why it is so comparatively rare in syphilitic heart disease. In a recent series of

*Read before the W. Va. Heart Association at Fairmont, W. Va., on June 8, 1936.

a hundred fibrillating hearts from Johns Hopkins, no syphilis was found; in fact it is pointed out that fibrillation speaks definitely against the presence of syphilitic infection. One rarely finds arrhythmia in disease of the aorta or aortic valve. It is less common in combined than pure mitral disease. It is rarely seen in infective endocarditis. I have recently seen four such cases pass out with no fibrillation. It is more frequent in adenomatous than exophthalmic goitre. The gist of the whole matter is, that we do not know what the specific etiologic factor or factors are. It seems quite possible that there are several unknowns which are capable of initiating the circus movement in an already diseased myocardium, for in the final analysis it is quite unlikely whether paroxysmal or otherwise, that hearts permitting of fibrillation are completely normal. Nahum and Hoff conclude from their experimental study that auricular fibrillation can be produced in hearts when they are subjected to the combined action of an exciting agent, and over activity of the vagus nerve. The unknown or exciting agent is probably, in their opinion, an electric shock or thyroxin.

Prognosis: Having been a badly burned child on so many occasions, I naturally fear this fire. Statistical data are of great value in the broad sense. In the individual case, it is cold, clinical experience, fortified by statistical data, upon which we must depend. Nothing is more helpful to me than the assurance that I have used the most efficient measures and that adequate time has passed and these have failed. Then and then only am I prepared to commit myself, and then with caution, for I feel that the heart can do more extraordinary things in the way of repair than any other organ in the body.

Here, as elsewhere in cardiology, the prognosis is contingent purely on the ability of the myocardium to do work. Granting that one has a good, or relatively good heart muscle, it follows that its ventricles contracting rapidly and in a haphazard fashion, as in fibrillation, are greatly reduced in efficiency. Accordingly, a slowly fibrillating heart with a low deficit, by delivering a large volume of blood, offers a better prognosis. It has been stated in terms of figures that a fibrillation with a pulse of 120 indicates a serious state; if 140 the expectancy is a matter of months; if 160 a matter of weeks. An intervening block, not produced by digitalis and of moderate degree, definitely improves the prognosis.

Figures concerning the mortality rate and expectancy in the different groups of fibrillators, rheumatic, arteriosclerotic, goitre, etc., differ so widely that they are not of sufficient value to discuss at this time. It seems, however, that here, as in many other serious diseases, the earlier in life the onset of the fibrillation, the more serious the outlook. According to Cookson, the prognosis improves yearly until the thirty-eighth year, then it begins to decline, that the average duration of life in the rheuumatic group from 18 years on was five and one-fourth years following the onset of the arrhythmia; in the non-rheumatic group, seven years.

Case, H. F.: Was told by an insurance examiner that his heart was not so good. Examination showed abnormal extrasystoles, occurring every three beats, followed by a compensatory pause and regular rhythm of two beats. Further than this, examination was essentially negative. During the examination, the patient was asked to bend ten times. This initiated a transient auricular fibrillation. Apical rate 120, radial rate 79, the latter being weak and totally irregular in volume and rhythm. Rest promptly restored a normal rhythm. Electrocardiogram was indicative of a myocardial degeneration, voltage showed fairly good muscle tone. Blood pressure 150/100.

History disclosed that the man smoked fifteen to twenty cigars daily, a hard worker with long hours. He was urged to omit smoking and work less. Since doing so has had no return of the paroxysms.

Diagnosis: Paroxysmal auricular fibrillation.

Comment/ My estimate of the case was, a mild myocardial degeneration in an over-

worked neurotic individual with a moderately increased blood pressure. The paroxysms were probably precipitated by excessive smoking. The case further demonstrates the point that paroxysmal fibrillation probably never occurs in a normal heart, although the pathology may not be demonstrable. Levine states that such attacks are frequent in rheumatic disease and hyperthyroidism.

Cases: Twenty-nine cases of auricular fibrillation treated by the intravenous administration of stropanthin, grs. 1/100, reported by Rykart and Hepburn, Toronto. The cases were those in which rapid slowing of the heart seemed desirable. Many of them had to a more or less extreme degree passive congestion with nausea and vomiting. Their conclusions were that the procedure was safe if digitalis had not been recently used, that a definite reduction in heart rate was usually obtained in five to fifteen minutes, reaching a maximum in twenty to sixty minutes. If necessary, the dose was repeated in one hour. It should not be repeated until the rate reached a stationary level, or had started to increase.

Comment: Stropanthin is not offered as a substitute for digitalis save in urgent cases, as noted. It is further to be noted that the dose employed was considerably larger than that recommended by Paul White and others.

Case, Mrs. A. P.: Forty years of age, gave a history of long standing rheumatic heart disease with prolonged periods of decompensation; in 1922, recovered compensation and carried on very well until December, 1932. At that time, after a trip to the third floor of her home, was taken with a spell of rapid tachycardia with moderate shock regarded as auricular flutter. During the course of digitalization, the flutter abruptly changed to fibrillation which was entirely uncontrolled by further digitalization. However, compensation was good. At the end of ten days, it was decided to give quinidine with resulting return to normal rhythm and pulse rate on the second day; continued so for three months and has done splendidly since on digitalis, in spite of the return of a slow fibrillation.

Diagnosis: Auricular fibrillation, serious type, which failed to respond to digitalis, responded ideally to quinidine.

Comment: Quinidine is no substitute for digitalis and should be used only in cases that have been thoroughly digitalized and have no signs of congestive heart failure. It is the most powerful of all cardiac depressors; it increases the refractory period of the auricle by decreasing its irritability and rate of conductivity. It is not a diuretic nor is it a good drug to improve cardiac contractability or to relieve decompensation. It is a most valuable drug and it is nonsense to refrain from using it on account of its toxicity when the proper indications for its use are present.

Case, Mr. X: A case of auricular fibrillation of 15 years' standing. Patient was thoroughly digitalized so that the T waves in Leads I and II were inverted. In three days a total of 108 grs. of quinidine restored normal rhythm.

Comment: "In apparently normal hearts, permanent auricular fibrillation was terminated by quinidine in 100 per cent of the cases irrespective of the age of the patient and the duration of the fibrillation."—(White).

Case Mr. B: Age 22, gives a history of inflammatory rheumatism at the age of twelve, a second attack four years later; following the second attack had his tonsils removed; has had no return of his rheumatism; has known for several years past that he had heart trouble. Was doing very well at desk work until one year past, when he had a severe sore throat with fever; following this noted moderate dyspnea on steps; later rapid, irregular heart action and edema of ankles in the evening. The condition, on rather inadequate treatment, advanced to a full blown auricular fibrillation with marked decompensation, pulse at apex 120, wrist 80 to 90; urine scant—1 mm. of albumin, casts, occasional blood cell.

The patient was satisfactorily digitalized, by the end of one week—compensation was restored, with an apical rate of 85, a radial rate of 80, later returned to work and has done well on regular digitalis ration.

Diagnosis: Auricular fibrillation, rheumatic type.

Comment: The case is presented as a typical case of auricular fibrillation coming on between 20 and 30, the age of greatest incidence. Fibrillation at this age always brings to mind rheumatic heart disease. While he is doing very well he continues to have a moderate pulse deficit and probably always will have it. If one can reduce the radial pulse to 80 with a deficit of only five, the result should be counted excellent. Digitalis did all that we could ask. It is in this type of case that the drug is at its best and one cannot expect an equal response from the drug in another type of heart disease save flutter.

Unlike quinidine, digitalis rarely if ever restores a normal rhythm. One might say that it improves the heart by bettering its morals, while quinidine holds it down by discipline. Many quinidine patients with normal rhythm state that they feel no better. It does not give the tonic effect of digitalis. This man's expectancy is approximately ten years.

Case, M. B.: Middle age man, comes in complaining of dyspnea, palpitation, nervousness; heart had been rapid and irregular for two months. Three days following thyroidectomy, continued to fibrillate. Quinidine, 36 grs. per day for four days, resulted in a return to normal rhythm; regular when last seen, end of ten months.—(Spiro and Newman).

Diagnosis: Hyperthyroidism with auricular fibrillation.

Comment: The case is cited because it presents quinidine therapy at its best. Strange as it may seem, digitalis is at its best when the heart is enlarged, fibrillating and decompensated. Christian very interestingly describes the final utilization of digitalis by the cells of a hypertrophied myocardium, opining that the reason for the better effect in a decompensated heart is that the cells here are definitely larger and materially increased in numbers, hence more of the digitalis body is metabolized with more of the specific digitalis substance made available. Quinidine, on the contrary, is at its best when the myocardium though fibrillating is normal or near normal, with no signs of decompensation. Lewis states that seven to ten days after thyroidectomy, the heart still fibrillating, quinidine will restore normal rhythm in 100 per cent of cases. Anderson says that it should be used not later than three to six days, granting the goitre is the whole underlying pathology. However, one should never forget the possibility of associated mitral stenosis, or what not.

Case, G. B.: Male, age 43, salesman, known to have an irregular rheumatic heart. Pulse showed marked arrhythmia though readily counted, rate at wrist 80, apex 88. Fluoroscopic examination, moderate if any enlargement. Cardiogram showed auricular fibrillation; ventricular rate 90, auricular rate 475, left axis deviation. Nothing in the curve to denote myocardial involvement.

Diagnosis: Auricular fibrillation, slow, in a reasonably normal heart.

Comment: This man has no complaints. Contrary to orders, he climbs mountains, and works without restriction. What should be done about it? Nothing. He could probably be returned to normal rhythm by either quinidine or stropanthin. It is doubtful if he would be any better off. "When the rate is moderate, 70 to 90, and the heart's efficiency is good, no treatment is necessary and the patient should be cautioned against prolonged physical effort."—(MacKenzie).

"It is our impression that the presence of auricular fibrillation does not necessarily imply a worse prognosis than a non-fibrillating heart with an equal amount of cardiovascular damage."—(Stroud). As is emphasized all through this paper, it is the efficiency of the myocardium that counts.

Case, Mrs. P.: Age 60. Blood pressure 180/100; arteries moderately sclerotic; comes in on account of fatigue and dyspnea. Six months past, heart suddenly began to palpitate, quite irregular; has not been so well since; is now on a regular digitalis ration, alternately at times gets theobromine and

theocin, with or without phenobarbital. The fibrillation is well controlled by the combination of drugs; is put to bed and the latter named drugs used when she shows signs of beginning decompensation.

Diagnosis: Auricular fibrillation, arteriosclerotic type.

Comment: It is to be noted that the arteriosclerotic type may come on very suddenly. However, it is quite likely that this patient has had extrasystoles for some time. As one would suspect, it comes later in life than the rheumatic type. Generally speaking, the only etiologic factor demonstrable is arteriosclerosis with or without hypertension. However, a failing heart with advanced hypertension rarely fibrillates. Here, as elsewhere in cardiac study, for correct treatment, and as a better guide to diagnosis, the etiology is imminently important. "Elderly patients with auricular fibrillation, who present no evidence of arteriosclerosis, hypertension or mitral stenosis should be suspected as being thyrogenic in etiology, 'burned out thyroids.' "—(Gottlieb).

As to prognosis, one might say of auricular fibrillation in general that the expectancy is very short in those under twenty-five and above sixty-five. Comparing the rheumatic with the arteriosclerotic type of the same age, the expectancy is approximately the same.

Case, Mrs. B: Age 52, three months previous to coming into the office noted very definite increase in pulse with slight excitement, undue fatigue, some dyspnea on steps, radial pulse 88, regular as to rate and volume, apical pulse 100. There was quite a sizeable goitre, BMR minus three and one-half. She was put to bed and thoroughly digitalized. She did well, with practically return of normal rate and rhythm, not being quite satisfied she went to a nearby city where a thyroidectomy was done. I have since learned that her heart has continued to fibrillate and in general is no better as a result of her operation.

Diagnosis: Auricular fibrillation, regarded elsewhere as an atypical thyrotoxicosis.

Comment: The case is presented primarily to present the very interesting work of Means —(Annals Int. Med., Oct. 1933), "Diagnostic use of Iodine in Thyrotoxicosis." The point I wish to make is, had this woman been given the iodine tests referred to, she would probably have been spared the operation. Means has stated "When the diagnosis (toxic goitre) is in doubt, iodine is given. The metabolism falls to slightly below standard. Iodine is omitted. Metabolism rises to the previous level. Iodine is given again and omitted again. The events are repeated. Such fluctuation in relation to iodine may be taken as final proof of the existence of thyrotoxicosis even though the rate never rises above what we call standard."

In this connection it is to be noted that occasionally remaining fragments of a subtotal thyroidectomy may become activated with a resulting return of the old heart symptoms with or without fibrillation. The condition may be so atypical that its real cause goes unsuspected. I have recently had this experience.

Summary: Auricular fibrillation presents itself in pathologic and apparently nonpathologic hearts.

Its true etiology is unknown, though it is classified as rheumatic, arteriosclerotic and thyrogenic, with a small group of cases without classification.

There is no pathology characteristic of auricular fibrillation.

It does not appear that the etiologic factor is very important. The age of onset, rate of ventricular contractions, length of time it has persisted, and above all the state of the myocardium, are the factors which determine the expectancy.

Proper treatment implies a proper etiologic diagnosis.

Treatment is usually highly satisfactory provided the myocardium is not too completely involved.

Digitalis is the drug of first choice when the myocardium is definitely diseased. Quinidine and stropanthin have a valuable place and should be used more frequently.

ABDOMINAL PAIN*

By M. H. PORTERFIELD, M. D.
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SIR James Paget, in that collection of essays which every medical student and doctor should read, "Confessio Medici", remarks that in order to become a truly successful practitioner of medicine a man should personally experience either a major operation or a serious illness every three years.

I am not capable of adding anything new to the diagnosis of abdominal conditions, but if I am able so to refresh someone's memory that they will recognize a few things they have known, but which have slipped their minds for the time being, I will be satisfied for the effort made in writing this paper.

The medical profession's chief aim should be the relief of the sufferer, regardless of whether a very highly technical diagnosis of the exact lesion has been made. Most of our patients come to us for the relief of pain. A person with a low grade carcinoma of the stomach has the lesion for a long period before relief is sought, but once a definite lesion is established in his mind he seeks relief from it. To do surgery on the hopeless case except where it is definitely asked, brings much grief to the surgeon and the family. There are many times when patients are rushed to operations when the surgeon knows full well the results will be fatal. Unnecessary expense is added to the overburdened family, the aftermath is unpleasant, and at the time when someone should be hospitalized, we have an unnecessary resistance to overcome that is brought on by our own thoughtlessness or greed. Would it not be better that in order to satisfy our innate curiosity, we should leave off some of the unnecessary technical procedures that are done chiefly to add to the completeness of the case history, and to make a showing before the family that a great amount of highly specialized treatment is being expended on their loved one.

Pain in the abdominal cavity runs the gamut of our experiences from the time we have the bellyache from eating green apples, until we have seen our last patient as practitioners of medicine and surgery. The majority of all surgical conditions of the abdomen, especially those of an acute nature, are ushered in with an acute attack of pain.

Pain is variously described as stabbing, agonizing, aching, gnawing, colicky, burning, and with the negro population is usually described as "a misery" no matter where the location or what the characteristics.

The burning gnawing type is usually characteristic of stomach distress, especially ulcers of the various types. Moynihan states, "The stomach is the biggest liar in the body", and this is nowhere better shown than in carcinoma that becomes inoperable before any symptoms are shown.

The relation of pain to the intake of food has a direct bearing in peptic ulcer and gallbladder disease, as well as the type of food used. Highly seasoned foods disturb the ulcer patient, while heavy, rich, fatty foods aggravate biliary conditions. Roughage seems to disturb colitis of the various types.

T. G. Miller of the University of Pennsylvania gives pain as the leading symptom in the order of digestive disturbances, gallbladder, duodenal ulcer, gastric carcinoma, gastric ulcer and appendicitis.

Appendicitis of the acute variety is invariably accompanied by pain. While statistics show that in adult life 75 per cent of the acute infections of the abdomen and 90 per cent under ten years of age are due to this disease, and with the mortality from this disease much higher than it should be, we

*Presented before the West Virginia State Medical Association at Fairmont on June 10, 1936.

should strive for early diagnosis, for in this manner only can it be reduced.

Low right-sided pain in women falls in three general classes: appendiceal, renal and gynecological. A true history, in all but the most obscure cases, together with the type of pain, will give the diagnosis.

Practically every organ in the peritoneal cavity may be the seat of disease, which in some of its manifestations, resembles disease which may arise in other organs closely located. Thus we have appendicitis, biliary disease, in all its phases; renal colic, intestinal hernia, intussusception, volvulus, acute pancreatitis, mesenteric thrombosis, renal and perirenal abscess, rupture of hollow viscera, tubal pregnancy, and such extraabdominal complications with referred abdominal pain as diaphragmatic pleurisy, pneumonia, osteomyelitis of the spine and gastric crisis of tabes dorsalis. Many of these should be recognized at first glance and carry definite earmarks of their identity. To cite one instance in one thousand cases of tabes dorsalis from a large clinic, surely a clinical entity, exactly ten per cent were operated upon during a gastric crisis for gallstones, gastric ulcer or appendicitis. This should give some idea of the confusion which exists from the diagnostic standpoint.

The most common symptoms in the above mentioned disease is pain around the umbilical region. The board-like rigidity of the upper abdomen together with the characteristic abdominal facies should give one sound reasoning for a ruptured gastric duodenal ulcer. Pain in the same region but referred to the right scapular area in the back gives one an impression of gall-bladder disease.

Temperature may vary little for the first few hours in any acute condition, when either due to shock it becomes subnormal or if it be of the severe infectious type, it should begin to rise. In those with severe infections and no resistance the temperature will remain the same.

The pulse is usually slightly accelerated in all types of severe pain. In such catastrophies as rupture of a hollow viscus with hemorrhage the pulse becomes weak, flabby and rapid.

Muscle spasm is surely more apt to occur, and usually does occur, directly over any irritated portion of the abdominal cavity. This is particularly true in appendicitis, cholecystitis and rupture of gastric or duodenal ulcers.

Tumor masses that are directly allied with pain and can be readily palpated are unmistakable aids in diagnosis. Tumors which increase rapidly in size suggest a twisted tumor. Localized abscess, or intraabdominal hemorrhage. Those which vary in size and consistency and tend to disappear and reappear are practically always of intestinal origin, with their presence and absence dependent upon intestinal peristalsis.

The hysterical individual describes pain to heighten many fanciful conditions so that each one must learn by experience as to the amount of credit that such should be given in order to arrive at a useful diagnosis. The stoic, due to his nature, will withhold the amount of pain or try to cover up what seems to him may be the need for acute surgery, and thereby lead to many false conclusions.

How then, with this confused array of duplicating and overlapping symptoms, is one to differentiate between the various abdominal conditions which constitute the bulk of surgical emergencies. We must face certain general facts based upon the laws of probability. The age incidence of certain diseases must be considered. Appendicitis occurs much more frequently in adult life than it does in extremes of youth or old age. Intussusception is seen usually in young children. Malignancy is the common cause of intestinal obstruction in an adult 45 years of age and over. Acute pancreatitis and biliary conditions are more common in adult life.

Sex is to be considered. Such conditions as ruptured ectopic, salpingitis, ruptured or twisted ovarian tumor need only be looked

for in women. Large series of cases tend to prove that certain conditions are more common in women than in men, as perforated gastric ulcer, biliary colic and displacement of kidney, while acute pancreatitis, duodenal ulcer and renal colic are more common in men. I might say also that no woman should ever be subjected to a laparotomy without first a careful vaginal examination.

Most important of diagnostic points is a careful history. Most catastrophies which occur in the abdomen are not in the strict sense of the word acute, but are an exacerbation of a disorder of long standing with an acute exacerbation. The number of attacks of appendicitis can often be elicited from the patient. Old patients with a history of so-called dyspepsia, with rapid loss of weight, with a sudden picture of acute abdominal catastrophe suggest malignant disease undergoing an acute inflammatory process.

In ectopic pregnancy there is definite history of delayed menstruation or history of shortened menses with the flow being bluish in color. A perforating gastric or duodenal ulcer has usually given its warning in digestive disturbances following the intake of food.

The treatment of all conditions arising in the acute abdomen calls for a careful summary of all the existing signs and symptoms in conjunction with a careful history. By doing these things a more correct diagnosis will be arrived at, with resultant better treatment for our patients.

Laboratory examinations are of definite value only when they show the outstanding characteristics of a specific disease. A blood count should be made in every case where appendicitis is suspected. Though I agree with Ochsner, who advised to operate and look at the blood count afterwards, when the white cell count is high with over eighty per cent (80%) polymorphonuclears, it is suggestive of some other infective process. Urinalysis should be done routinely to rule out renal conditions which may contraindicate or limit the amount of surgery to be done. Pyelitis should especially be ruled out in children and pregnant women.

X-ray examinations should be very carefully interpreted in abdominal conditions. I would here like to report an interesting case:

Mrs. O., 50 years of age, with past history negative. Mother and father living and well. Three normal pregnancies, climacteric passed one year with no untoward symptoms. Present history of pain and tenderness in the upper right quadrant of abdomen, nausea and vomiting, with some dull aching at times under the right scapula. These symptoms persisted and with acute exacerbations for some six months, when gall-bladder x-rays were taken. The report given was that the gall-bladder contained numerous small stones. A cholecystectomy was done, no stones were found, and the gall-bladder wall was only slightly thickened. Her symptoms subsided while in the hospital and while recovering at home, but as soon as she was on her feet again the same symptoms returned and gradually became more severe. A recheck with a complete x-ray of the spine showed tuberculosis, involving the bodies of the tenth and eleventh vertebra. Upon close examination of the original x-ray, the same condition was found. Had a little more care been exercised, this woman would have been saved an abdominal operation, and her recovery would have been earlier. However, with rest in bed in extension for four months, followed by body casts for sixteen months, she is now fully recovered.

Last of all the surgeon who hesitates is lost. Summarize the facts at hand, weigh them carefully, form a definite opinion and stick to it.

Morphia should never be given until a definite diagnosis is made.

No acute abdomen should go over six hours without a definite diagnosis. Operate when needed. There is much less harm done from opening one innocent abdomen than not opening one which should have been opened early.

THE TRAUMATIC SACROILIAC SYNDROME*

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THIS subject has been chosen for the purpose of discussing briefly that group of cases with disability relating to the sacroiliac joint and caused by trauma. We have avoided all other causes of low back pain whether orthopedic, gynecological, urological, or due to other pathology, and to present the findings upon which the conclusions are based without attempting to argue or evaluate the many controversial theories which surround the whole subject of pain in the lower back. Any presentation of the enormous amount of such data would be entirely beyond the scope of this paper.

For the purposes of this presentation, the traumatic sacroiliac syndrome is defined as being that of pain, local and referred, with disability resulting from abnormal mobility of the sacroiliac joint; this abnormal mobility being due to a ligamentous insufficiency resulting from trauma.

The possibility that this defined syndrome may occur is substantiated by numerous investigators. As has been generally accepted, the sacroiliac joint depends for its stability mainly upon ligamentous masses which extend between the ilium and sacrum, anteriorly and posteriorly, and in addition the sacrospinous and sacrotuberous ligaments.

It has recently been demonstrated in a large series of cases by Pitkin and Pheasant, that in the standing position all movements of the trunk except flexion and extension normally are associated with paired antagonistic movements of the ilia about a transverse axis that passes through the center of the symphysis pubis; that the sacrum in rotation and lateral bending has as a corollary an antagonistic motion of the ilia and also that this antagonistic motion of the male ilia is thirty-three and one-third per cent greater in subjects who complain of pain originating in this region.

It has previously been shown that a tendon insertion is phylogenetically part of the muscle and is supplied by twigs of the same nerves which supply the muscle, and since the sacrolumbar and anterior sacroiliac ligaments give origin to only one muscle—the iliacus. Through the anterior divisions of the second and third lumbar nerves these ligaments have a direct central connection with the corresponding anterior dermatomes.

The posterior sacroiliac and sacroischial ligaments have access to four different types of innervation.

(1) Direct branches from the posterior sacral plexus (fifth lumbar posterior division to third sacral, posterior division), which are given off by the common cord as it descends to pierce or to curve around the inferior margin of the gluteus maximus muscle.

(2) Twigs from the origins of the sacrospinalis and multifidus muscles (first lumbar posterior division to third sacral posterior division).

(3) Probably some small direct branches from the anterior division of the fourth sacral nerve, when it pierces the sacrotuberous ligament.

(4) Twigs from the origins of the gluteus maxims, piriformis, biceps, femoris (long head), and semitendinosus muscles (fifth lumbar, anterior division to third sacral, anterior division).

Thus the posterior sacroiliac and sacroischial ligaments have a close central connection with the first three sacral posterior dermatomes and all of the five lumbar posterior dermatomes, with the fifth lumbar anterior dermatome and the first three sacral anterior

*Presented before the West Virginia State Medical Association at Fairmont on June 9, 1936.

dermatomes, and probably with the fourth sacral anterior dermatome.

Head has previously proven that when a painful stimulus is applied to a part of low sensibility in close central connection with a part of much greater sensibility rather than in the part of lower sensibility to which the stimulus was actually applied. The external surface of the body is of course the part of greater sensibility, compared to the sacroiliac ligaments. From these facts Pitkin and Pheasant conclude that the referred pain (telalgia) affects any part or all parts of the lower extremities and genitoinguinal regions except the internal crural and plantar regions. The lesions that produce this type of pain are associated with lateral spinal scoliosis. They do not cause objective neuropathological manifestations other than reflex physiopathic disorders and atrophy of disuse. When caused by intraarticular lesions of the upper sacral joints which do not affect the extraarticular ligaments, telalgia appears only in the intergluteal triangle. Pathological changes in the tension of, or irritative stimuli applied to, the extra-articular ligaments of the upper sacral joints cause referred pain in the lower extremities. Referred pain that affects the lateral crural region originates in the posterior sacroiliac and sacroischial ligaments.

From this it is seen that the anatomical and mechanical possibilities resulting from stresses and strains on the extra-articular ligaments of the sacroiliac joints, are such as to result in two types of traumatic sacroiliac syndromes, namely:

First, the acute and immediately disabling subluxation with ligament tear due to a twist or fall and characterized by sudden onset, inability to bear weight on the affected leg and excruciating pain.

Secondly, the subacute or chronic type in which there is a gradual stretch of the ligaments due to occupational strain, as in prolonged automobile driving as described by Conwell, or similar conditions. In this second type Cowan, Yeoman and others note an arthritis or periarthritis and report a faulty posture with abnormal tilting of the sacrum and obliteration of the lumbar curve. Actual shortening of the leg one-fourth of an inch or more is also a factor as has been observed by Cyriax and others. These types are slow and insidious in onset. The exact contributing effects of sacralization of the fifth lumbar vertebra spina bifida occulta, and other congenital anomalies of the low back are not germané to this paper and will not be considered beyond this mention.

The clinical history in the first type is that of a sudden catch or stitch or tear followed by an excruciating pain over the sacroiliac joint with inability to straighten up, the pain radiating to any one or several of the sites previously mentioned.

In the second type the symptoms are more slowly developing and referred pain is later in appearance.

In both types a history of trauma is usually present. The pain is worse on exercise and relieved by rest; otherwise the history is not important.

In the examination it is well to remember that this condition presents one in which the highest percentage of malingering exists, being placed as high as five per cent by some writers.

One of the most important points in differential diagnosis is localization of acute tenderness which, if over the posterior superior spine and sacrosciatic notch, is important positive information; other points may indicate either an anterior sacroiliac or a lumbosacral lesion.

On rectal examination it is almost always possible to demonstrate tenderness over the affected side.

Baer's sarcoiliac point is a point of tenderness two inches lateral to the umbilicus on a line between the umbilicus and the anterior superior spine.

Gaenslen's sign is elicited when the thigh and knee of the affected leg are strongly flexed and the limb is pressed against the chest; upon hyperextension of the other hip, pain appears in the affected sacroiliac articulation.

Laguere's sign is looked for in testing the condition of the hip joint. The thigh is carried into abduction, flexion and external rotation, and the knee is pressed down strongly against the table. As a result, the femoral head bears against the anterior portion of the capsule, and pain is produced if there is effusion into or irritation of the joint. The maneuver also transmits strain to the sacroiliac articulation on the same side, and in case of affection of this junction, pain is produced. There is usually no effect upon the sacrolumbar articulation.

Goldthwaite's sign is elicited when the thigh on the affected side is flexed strongly and the knee is extended; this produces tension of the hamstring muscles, causing pain in the affected sacroiliac articulation.

Straight leg-raising elicits pain where there is sciatic radiation whether in the sacroiliac or in the sacrolumbar derangement. As a contralateral sign, it is of great importance to detect a highly increased sensitiveness of the sciatic nerve. If the leg on one side is elevated with the knee extended, the gluteals on the other side must contract in order to force the heel of the resting leg firmly down against the bed. If the sciatic nerve is very sensitive, or if there is a very tender sacroiliac joint on the resting side, this gluteal contraction causes pain contralaterally to the elevated leg.

Forcible compression of the iliac crest is carried out as follows: The patient is turned to the side and the iliac crests are compressed against each other by the incumbent weight of the examiner; this often elicits pain in a sprained sacroiliac joint, but it usually has no effect upon the sacrolumbar articulation.

These signs in general present the more important special signs by which, if taken together with a careful history and complete physical examination, afford a conclusive diagnosis of a sacroiliac lesion.

Before selecting the treatment which is best applicable to an individual case, it would seem wise to evaluate the individual case on the basis of severity of symptoms, whether initial or recurrent attack, economic condition and occupation of the patient together with the general physical condition and age as an operative risk.

With these factors in mind, the treatment best suited to the individual case can be chosen from the following general lines of treatment. First, for the case with negative x-ray findings in an individual whose occupation does not necessitate heavy lifting or mild type of strain or injury, ambulant treatment consisting of immobilization of the pelvis by a means of adhesive strapping to be extended well above and below the area and to include a ptosis pad and several anterior straps if much abdominal sag is present. There may be substituted any of the standard sacroiliac belts or braces. In addition, the patient should be placed on a hard flat bed, heat (radiant or diathermy), massage, sinusoidal electricity or other forms of physiotherapy may provide additional relief. Buck's extension traction may be of value in relieving the muscle spasm. In the somewhat more severe, or persistent cases, the use of Baer's manipulation under anesthesia in a large percentage of cases and when followed by immobilization in a cast for ten days to two weeks then the use of a belt will give symptomatic relief. Baer's manipulation consists in gradual stretching of the posterior ligaments by progressive flexion of the leg at the hip with the knee extended. There is, however, in my experiene, a considerable percentage of recurrence if manual labor is resumed. The more radical surgical treatment consists in fusion of the joint by means of any of the standard methods such as Smith-Petersen or Hibbs. The technique of these are too generally known to need further discussion.

It has long been felt that there is a need for some form of therapy which would give a higher percentage of complete relief than the more conservative methods but which did not necessitate the formidable surgical procedure incident to the standard type of fusion. It is this need that the method of Royle, reported in Lancet, October, 1935, seems to meet in full. Briefly the technique consists

in drilling three-eighth inch holes through the ilium posteriorly across the sacroiliac joint into the sacrum. The holes are then tapped with a standard tap and a beef-bone screw inserted and screwed snugly into position and cut off flush with the surface of the ilium. The skin incision is the usual curved sacroiliac incision. The ilium, however, is approached by two slits in the gluteus muscle about two inches in length in the axis of its fibers at the level of the posterior superior and posterior inferior spines. This procedure can be carried out on any average surgical risk, and under any type of anesthesia. The entire procedure occupies about twenty minutes. In the series to be presented at the same time, a Baer's manipulation was carried out. This above procedure has been carried out on seven cases with practically uniform results.

X-ray findings which have been reported as positive by Smith-Petersen in 80 per cent of cases consist of the following: (1) Increased density along the margins of the joint; (2) irregularity along the joint line; (3) proliferative changes of the inferior margin of the joint; and (4) disalignment of the pubes.

Case No. 1: White male, age 23 years, admitted to the hospital on September 25, 1935. The history of a recurrent left sacroiliac strain was given. Original injury was two and one-half years ago at which time rest in bed, etc., gave relief until resuming work. Manipulation two years ago with relief for approximately three months. Complains of a constant pain radiating down the back of the left leg with exacerbation at frequent intervals necessitating a week to ten days rest in bed. Beef-bone screw fixation was done on October 3, 1935. The cast was removed at the end of one week and the patient was allowed to walk at the end of ten days. There was no further pain, and he was discharged October 21, 1935. Patient returned to work as a window washer, his usual occupation, six weeks postoperative. Follow up at regular intervals shows there has been progressive fusion of the joint and the patient has continued to work without complaint. At the present time there is a slight tingling sensation on the lateral side of the lower left leg but that is not severe enough to interfere with his usual activities.

Case No. 2: White female, 47 years of age, admitted to the hospital on October 15, 1935, with the usual history of acute sacro-iliac strain on the right in November, 1934. Has had three attacks since, each treated by conservative methods. Present attack began one week ago, and has not responded to rest or adhesive strappings. Beef-bone screw fixation was done on October 16, 1935. Patient had an uneventful operative course. The cast was removed on the seventh day and patient began to walk on the tenth postoperative day. Patient was followed at regular intervals until January 15, 1936, at which time her only complaint was slight stiffness on walking up stairs. She has not returned since that date.

Case No. 3: White female, aged 38, admitted to the hospital on February 17, 1936, with complaint of pain in the right sacroiliac region with inability to stand or walk any distance without disabling pain. Disability of one year's duration caused by a fall. Previous treatment consisting of physiotherapy and brace were unsuccessful. On February 18, bone screw fixation was done. Immobilization in a cast for seven days. Patient walked on the tenth postoperative day. Discharged from the hospital on the fourteenth postoperative day, ambulant though some pain and stiffness persisted. Patient was fully ambulant at six weeks. Disability consisting of some stiffness, occasional radiation of pain down the lateral side of the leg but not sufficient to prevent her carrying on her usual housekeeping duties. Patient has been followed at frequent intervals since and was given a series of diathermy treatments for symptomatic relief. Stiffness has gradually diminished. The pain is growing progressively less severe.

Case No. 4: White male, age 49 years, admitted to the hospital January 28, 1935, giving a history of disabling acute sacroiliac strain right, of one week's duration which did not respond to conservative measures. History of frequent minor attacks lasting about three to four days over a period of the last two years. Immediate injury resulting from jumping from the back end of a truck. Bone screw fixation was done on January 31, 1936, followed with adhesive strapping. Patient sat up on the seventh postoperative day and walked on the tenth. Has had no complaint since operation. Returned to his usual occupation as a coal loader seven weeks postoperative and follow up at frequent in-

tervals since shows patient has continued to work without complaint.

Case No. 5: White male, 38 years of age, admitted to the hospital on March 31, 1936, with history of pain in the right sacroiliac joint. X-ray shows separation of that joint. Patient has had two previous attacks within the past two years. The first was relieved by rest and physiotherapy, but the second had not been relieved. Its onset was about March 7. On April 1, 1935, beef-bone screw fixation was done, immobilization with adhesive strapping. Patient was allowed up on the sixth postoperative day and walked with crutches on the tenth. Remained on crutches for a period of three weeks and then walked with a cane. Some pain persisted in the right leg until about six weeks postoperative at which time he returned to his usual position of traveling collection agent. He has had no complaint since that date.

Case No. 6: White male, age 63 years, admitted to the hospital on March 20, 1936, with complaint of pain in the right sacroiliac with history of several attacks in the past year, each succeeding attack being more severe. Present attack had confined patient to bed for past week. On March 21, 1936, a bone screw fixation was done and immobilized with adhesive strapping. Patient had an uneventful convalescence with the exception of postoperative hiccups. He was allowed to sit in a chair on the seventh postoperative day and to walk on crutches on the tenth. He was discharged from the hospital walking with the aid of crutches. He continued on crutches gradually increasing his exercise to the end of the fourth week, at which time he returned to his usual occupation which was largely office work. He has been followed closely since operation and has no recurrence of pain and has continued to improve since discharge from the hospital.

Case No. 7: White male, age 27 years, admitted to the hospital on April 21, 1936, with a history of right sacroiliac subluxation following a fall about eight weeks prior to admission. Patient has been unable to walk or bear weight on the affected leg since injury and has failed to respond to the usual conservative treatment. X-ray evidence of right sacroiliac displacement was present. On April 22, 1936, a bone screw fixation was done, and immobilization with adhesive strapping. Patient had immediate relief from the pain which had lasted for about twelve days. He was discharged on the ninth postoperative day walking with crutches and with no discomfort. On the fourteenth day he began to have recurrence of pain and was unable to walk without aid of crutches as he had been doing for two days previously. Pain persisted from this time until three weeks postoperative when an abscess pointed near the upper end of the operative incision and was opened. Immediately following the drainage of the abscess, pain began to diminish and disability became less marked. Five weeks postoperative there was still slight drainage but patient was able again to discard crutches and walk without discomfort. He returned to light work six weeks postoperatively.

Analysis of this group of cases shows that the average period of postoperative convalescence has been approximately ten days. The average period before patient was able to return to light work has been six weeks. X-ray evidence of tolerance of the foreign material together with progressive ankylosis of the joint has been found. The recurrence of pain in the one case with formation of the abscess was confirmatory evidence of the etiology of the pain being tension on the sacroiliac ligament.

(1) The etiology of the pain and its radiation in traumatic sacro-iliac conditions are due to abnormality of the joint attended by stretching or tearing of the ligaments.

(2) A series of cases has been presented demonstrating fixations with beef-bone screws by the technique of Royle with markedly shortened disability period, shortened period of hospitalization through the means of a comparatively simple and non-shocking operative procedure.

(3) Operative interference is indicated in the more severe cases of acute sacroiliac conditions and in the persistent chronic ones where possible, as in the present cases, without a formidable operative procedure.

Discussion

Dr. H. A. Swart, Charleston: This is a very interesting paper with an entirely new procedure. In the older operative methods the patients had to be kept immobilized, usually in bed six to eight weeks, and wear casts or braces from two to three months after getting up, and they were not allowed to do active labor for three or four months. Dr. Smith's procedure, in which he lets them up in a

week to ten days and go to work in six weeks, shows considerable improvement over the old method. However, I think there are some criticisms that can be made.

First, regarding beef-bone screws, I believe that immediate fixation is obtained, thus affording relief of pain. Whether or not this is permanent is another question. We all know that you use a beef-bone screw in fixation of onlay grafts for non-union and that in time the screws become loose, there is bone atrophy about the screws, and many times the screws fall out. In that operation we do not worry about that, but I believe it is possible in Dr. Smith's operation that the screws will become loose and allow the same condition to recur.

Dr. Smith also states that progressive fusion of the joint occurs. In the absence of any operative procedure to roughen the joint surface, removing cartilage, done in the older operations, or in the absence of disease, because he says these cases are traumatic only, I fail to see why progressive fusion should occur.

Regarding the x-ray diagnosis of sacroiliac slip he states there is a great deal of controversy. Personally I have never been able to satisfy myself that such lesions can be demonstrated with x-ray. It is possible that other surgeons can do this, but I have yet to be shown how it can be done.

This certainly is a much shorter procedure and more easily done, and Dr. Smith says his results so far have been good. I hope they will continue to be good, but I believe that we should reserve judgment on this for at least a year after operation before we say how permanent the results will be. I certainly hope they will be permanent because if so it adds a very valuable procedure to the armamentarium of the orthopedic surgeon.

Dr. Claude B. Smith, (closing the discussion): I thank Dr. Swart for his very excellent discussion. I would like to say, however, that in preparing the paper and in adopting the procedure, credit was given to Royall of Australia for originating the operation. In reviewing the literature, however, I find a report, again in *The Lancet*, in which an English surgeon, Cumming, was quoted by another observer as having had a case eight years postoperative in which screws were used without any evidence of intolerance of the beef-bone or of recurrence of the disability.

Secondly, as regards whether or not these joints do fuse with only the trauma or only the roughening occasioned by the drill and the screw passing through the joint, the only evidence I have to offer is that the x-ray shows it has fused in from two to three months.

There is a question as to the slipping. It is a highly controversial question. The authorities are on both sides. At any rate, it seems certain that there is in these traumatic cases evidence of stretching and tearing of the ligaments with pain referred along the nerve roots which supply the posterior and anterior sacroiliac region.

REFERENCES

1. Pitkin and Pheasant: J. B. & J. Surg. 18: 111-135.

2. Head: Quoted by Pitkin & Pheasant—Ibid.

3. Pitkin & Pheasant: J. B. & J. Surg. 18: 365-374, April, 1936.

4. Ober: J. B. & J. Surg: 18: 105-110, January, 1936.

5. Mennell: *Backache*. 2nd Ed. P. Blakiston, Philadelphia, 1935.

6. Steindler: *Dis. N Deform. Spine and Thorax*. C. V. Mosby, St. Louis, 1929.

7. Smith-Peterson & Rogers: J. B. & J. Surg.: 10: 118, 1926.

8. Piersol: *Human Anatomy*. J. B. Lippincott Co., Philadelphia.

9. Key & Conwell: *Fractures, Dislocations & Sprains*. C. V. Mosby, St. Louis, 1929.

10. Pittfield: Am. J. Med. Sc. 141: 855: 1911.

11. Cowan: *The Relation of Sciatica to the Sacroiliac Joint*. Brit. Med. J.: 1-372, 1923.

12. Cox: *Sacroiliac Subluxation as a Cause of Backache*. Surg. Gynec. Obstet., XLV, 637, 1927.

13. Yeoman: *The Relation of Arthritis of the Sacroiliac Joint to Sciatica*. Lancet, 11, 1119, 1928.

14. Williams & Yglesias: *Lumbosacral Facetectomy for Postfusion Persistent Sciaticia*. J. B. & J. Surg., 15: 579, July, 1933.

15. Freiberg & Vinke: *Sciatica and the Sacroiliac Joint*, J. B. & J. Surg., 16: 126, 1934.

16. Craig & Ghormley: *The Significance and Treatment of Sciatic Pain*, Jour. A. M. A., 100; 1143, April 15, 1933.

17. Cyriax: *Minor Displacements of the Sacroiliac Joints*. The British Journal of Physical Medicine, 8: 191, April, 1934.

18. Jackson: *Chronic Sacroiliac Sprain With Attendant Sciatic*, The American Journal of Surgery, 24: 456, May, 1934.

19. Miltner and Lowender: *Low Back Pain*. J. B. & J. Surg. 13, January, 1931.

20. Heald: *The Sacroiliac Problem*, The Lancet, 215: 66: July, 1928.

21. Royle: *Fixation of Sacroiliac Joint*, The Australian and New Zealand Jour. of Surgery. October, 1935.

A PLEA FOR EARLY DIAGNOSIS OF PERNICIOUS ANEMIA*

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PERNICIOUS ANEMIA is a disease of the fifth and sixth decades of life but may appear before the third decade. According to Minot the disease has existed for an average of 1.36 years before the diagnosis is made. Correct diagnosis can be made only by blood examination, but as Cabot has shown, by this time the red cell count has dropped to an average of two million per cubic millimeter. What has been happening to the patient during the time in which his blood count has been falling? The past history of some of these patients gives us some clue. They have been treated for heart trouble because they had palpitation or weakness, for liver trouble because they seemed jaundiced or for gastric disorders. Blood examination may have been made in some cases and owing to the slight changes the diagnosis was overlooked. Many cases remain undiagnosed until the red cell count drops to a million or even less.

It is possible that pernicious anemia can be diagnosed much earlier if it is remembered that it is a disease involving not only the blood but the gastrointestinal tract and the central nervous system. Symptoms referable to one or both these systems occur frequently and, at times, antedate the anemia itself. It is important to remember that every case of pernicious anemia first consults his family doctor and is treated by him for a longer or shorter interval. During this time the diagnosis can be suspected or established if a careful history is taken and certain routine examinations carried out.

Symptoms of gastrointestinal involvement are sore mouth, sore tongue with atrophy of the papillæ and even ulceration; loss of appetite, fullness after eating and "gas." The bowels may be loose especially on rising in the morning. There may be crises of abdominal pain with vomiting and rigidity of the abdomen simulating a surgical abdomen. A characteristic finding in all cases of pernicious anemia is the complete absence of hydrochloric acid in the stomach contents. This is so constant that the presence of hydrochloric acid rules out the possibility of pernicious anemia. To be certain that no acid is secreted it may be necessary in some cases to repeat the analysis after the injection of one-half c.c. of histamine hydrochloride (1-1000).

Involvement of the central nervous system is common especially in older patients. This may take the form of multiple neuritis and cause numbness and tingling in the hands and feet or there may be definite involvement of the spinal cord tracts. If the posterior tracts are involved the symptoms resemble those of tabes dorsalis and the patient has absent knee jerks, a positive Rhomberg sign, and there is loss of the vibratory sense over the tibia.

If the lateral tracts are involved the legs are spastic, the patellar reflexes are increased and the Babinski sign is positive. In many cases both the posterior and lateral tracts are involved and there is a combination of signs and symptoms. It is important to remember that at the present time these changes in the nervous system constitute the gravest feature of pernicious anemia from the patient's viewpoint, for long after his blood has been restored to normal he may still have his numbness and tingling and ataxia. Unless liver therapy is adequate, the lesions in the nervous system may persist or even advance to a cord bladder or a psychosis. Only early diagnosis and adequate liver therapy supplemented with a high vitamin diet can arrest these changes.

*Presented before the Section on Internal Medicine, Fairmont, on June 8, 1936.

Finally, there are symptoms of pernicious anemia directly due to the anemia. These are weakness, fatigue, palpitation and shortness of breath. Edema of the lower extremities is rare. At times there are pains in the precordium resembling angina pectoris. Fever of one or two degrees is often present. All these are relieved when the anemia is overcome.

Helpful objective signs, beside the achlorhydria, are the presence of increased bilirubin in the blood serum and the presence of urobilinogen in the urine.

It is clear from the foregoing that the diagnosis of pernicious anemia is a problem not only for the general practitioner, but for the gastroenterologist, the neurologist and the laboratory worker. Each one must keep the possibility in mind and remember, as Minot says, that the tuning fork to elicit loss of vibratory sense and the presence of achlorhydria are of equal importance with the blood examination.

When one encounters conditions as outlined the final test is to examine the blood. When the red cell count has fallen to two or even three million the diagnosis is easy and is made by finding a high color index and large numbers of deeply stained round or oval macrocytes in the blood smear with many small red cells and poikilocytes. All are deeply stained. There is no achromia. When the anemia is slight the diagnosis may, and probably often is, overlooked because the examiner has been accustomed to see changes so overwhelming as to be taken in at a glance. The difficulties may be appreciated if one will look at a blood smear of a patient during an intermission or after a course of liver therapy. The picture has so changed that he may suspect but will not say that pernicious anemia is present. More studies made of blood smears during liver therapy will greatly aid in the detection of cases earlier. In addition to the routine tests such as the hemoglobin estimation, the red cell count and blood smear examinations the following examinations may be of aid: The volume index and the mean corpuscular volume should be one or above one.

If the patient's symptoms fit in with the picture as drawn, if there are present loss of vibratory sense over the tibia, achlorhydria and slight or moderate reduction in red cells with a volume index and a mean corpuscular volume above I, and the smear shows macrocytes with deep staining, one is justified in proceeding with liver therapy both as a therapeutic test and as a curative measure. This does not mean that I advocate liver therapy on suspicion indiscriminately. Every attempt should be made to make a correct diagnosis before liver therapy is begun but in early cases one will have to be satisfied with a combination of symptoms, signs and blood picture as outlined. The value of this method lies in the fact that if the patient does not respond to liver therapy within two weeks he does not have pernicious anemia, and no harm has been done. In this time any pernicious anemia case will show a rise in blood count and hemoglobin and improvement in his general condition.

Liver therapy, according to this plan, is carried out thus. As soon as the diagnosis is made, the patient receives two one c.c. vials of liver extract, intramuscularly. Each vial is equivalent to one hundred grams of liver. During the next six days he receives a daily injection of one vial (one c.c.) and during the second week he receives one injection every other day. At the end of this time another blood examination is made (several may be made in the interval). There should be a definite increase in the hemoglobin and red cells, urobilinogen, if present, should have disappeared from the urine and the blood serum should have lost its high content of bilirubin. Reticulocyte response is marked if the anemia is severe but much less so if the anemia is moderate. Finally the patient should have experienced much relief from all his symptoms except the neurological. The achlorhydria is not influenced. From this point on the injections of liver extract may be given at intervals of one to three

weeks or the patient should be given the oral extract. The amount of liver to be given should be governed by the blood count. Cases with neurological symptoms should be given an extra amount.

Summary: 1. Pernicious anemia is a disease of the central nervous system and the gastrointestinal tract as well as the blood, and it is present for an average of 1.36 years before it is correctly diagnosed.

2. A careful history as to gastrointestinal and neurological complaints will aid us in suspecting the condition and the tuning fork will help us in finding a loss of vibratory sense and the stomach tube will demonstrate achlorhydria.

3. Careful blood examination will reveal many cases earlier but if there is any suspicion, as outlined above, volume index and mean corpuscular volume determinations should be made. If these are one or above one, the diagnosis is practically assured.

4. The diagnosis should be made before liver therapy is begun for this alters the blood picture to such an extent that a diagnosis can not be made from the blood.

5. As soon as the diagnosis is made intensive liver therapy should be begun. This is best carried out by injecting liver extract intramuscularly, daily during the first week and every other day during the second week and as indicated thereafter.

6. A patient who does not respond to liver therapy in this time does not have pernicious anemia. Thus the treatment serves both as a therapeutic test and as a curative measure.

BIBLIOGRAPHY

1. D. M. Blum: *Pernicious Anemia.* Journal of Iowa State Medical Society, 23; 255 (May) 1933.
2. C. F. Kemper: *Diagnosis and Treatment of Pernicious Anemia.* Northwest Medicine 32; 196 (May) 1933.
3. E. Eldon Baum: *Recent Advances in Diagnosis and Treatment.* Journal of the Oklahoma State Medical Association, 26; 364 (Oct.) 1933.
4. Ambrose, G. McGhe: *A Plea for Earlier Diagnosis.* The Canadian Medical Association Journal. 30; 274 (March) 1934.
5. George R. Minot: *Some Aspects of the Diagnosis of Pernicious Anemia.* Med. Clin. N. A. 18; 935 (Jan.) 1935.
6. Allen, Ellery G.: *Progress in Diagnosis and Treatment.* New York State Journal of Medicine, 35; 448 (April 15) 1935.

THE PREVENTION OF ACUTE SURGICAL MASTOIDITIS*

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THIS subject, "The Prevention of Acute Surgical Mastoiditis," assumes that all acute infections of the mastoid process do not require surgery to effect a cure. There is an indefinite percentage of acute middle ear infections, which, in terms of the laity, will "drain out" with no treatment. Likewise, there is a small percentage of cases which will go on to the typical surgical mastoid with all the classical symptoms, which no amount of conservative treatment will control. These cases will naturally require a mastoidectomy to secure a satisfactory result. In between these two extremes lie the great majority of the acute running ears, for which the average otologist is consulted, and, when the possible complications incident to even the most skillful surgery of the mastoid process are considered, it is better for all concerned to avoid a mastoidectomy in the handling of acute running ears if and when it is at all possible safely to do so.

This logically brings us to the question of just what are the factors of safety in dealing with the acute running ear and acute infections of the mastoid. Just where is the borderline between the acute suppurative otitis media and acute mastoiditis? Is this borderline of more academic interest than actual practical interest when viewed from the standpoint of whether or not surgery is indicated? What is the actual pathology present?

*Read before the Eye, Ear, Nose and Throat Section, Fairmont, June 8, 1936.

What is the organism with which we are dealing, and by what mode of entry did it reach the mastoid process? What were the predisposing factors and what was the original direct cause of the middle ear and mastoid involvement? What is the patient's general condition and how is he combatting the present infection? Is the pathology really localized in the mastoid process or are we dealing with an acute generalized upper respiratory infection with its incident temperature, blood picture, toxemia, etc.? These are the problems I should like to discuss with you.

Shuster, in his article, "Intracranial Complications of Otitic Origin," states: "Intracranial complications from acute suppurative otitis media are very infrequent and form an extremely small percentage of the total number of intracranial conditions." With the exception of one child who developed a primary jugular bulb thrombosis, I have never seen an intracranial complication from an acute running ear, and the more closely one follows the statistical reports from the larger clinics, the more one is impressed with the apparent fact that intracranial complications of acute suppurative otitis media and acute mastoditis are of academic interest when considered preoperatively, but of quite practical interest when viewed in the light of postoperative complications.

I will review the developments leading up to the acute middle ear infection and mastoiditis. Perskey, in his resumé of 644 cases on the service of Dr. George M. Coates, analyzed the direct causes of mastoiditis in the following proportions:

(1) Colds, including coryza, sore throat and tonsillitis 58%
(2) Grippe, about 15%
(3) Acute infections (exanthemata) about 15%
(4) Surgery, about 15%

With the exception of the waves of acute ear infections incident to epidemics, I believe that this is about the same proportion of causes of mastoiditis as are reported from all larger clinics in the United States. It is interesting to note that in the 644 cases, approximately 50 were due alone to surgery of the nose and throat. One wonders if this does not logically mean we are operating upon our nose and throat cases entirely too soon after acute upper respiratory infections. I am positive, in my own practice, that when viewed from the standpoint of postoperative hemorrhage, prolonged convalescence, and acute ear infections, that my past mistakes can be correctly attributed to having performed surgery without sufficient lapse of time after acute infections. If it is possible to set any arbitrary time period after which it is safe to do even a simple tonsillectomy following an acute infection, it seems to me that that period of time should certainly not be less than six to eight weeks. It is my feeling that at least our 15 per cent of acute mastoidectomies charged to surgery could be materially reduced by conscientious and enthusiastic waiting before attempting any surgical procedure after acute upper respiratory infections. So much for mastoiditis produced by surgery.

Now, let us turn to the direct causes of our big group of running ears. Again referring to Coates' 644 cases, there was 58 per cent due to colds, with accompanying coryza and sore throat; 15 per cent due to grippe, and 15 per cent due to the exanthemata. Of the exanthemata, measles and scarlet fever were the chief offenders. Since it is a recognized fact that in the vast majority of acute running ears the mode of entry is the eustachian tube, it seems logical to discuss all of these cases under one heading; in other words, 88 per cent of the 644 cases followed acute upper respiratory infections of some type. I do not hesitate to include the exanthemata in this group because they invariably begin with primary upper respiratory infections and are either produced directly or certainly accompanied by the same organisms which cause our acute suppurative ears. I refer especially to the streptococcus — hemolytic and nonhemolytic. The reports from the larger clinics show that this is the culprit producing

the vast majority of these cases. The average of the reports from these various clinics charge approximately 82 per cent of the acute surgical mastoiditis to streptococci alone; the remaining group being made up largely, in order of frequency, by staphylococcus, pneumococcus, and micrococcus catarrhalis. It would seem logical to conclude from the above that approximately 98 per cent of all acute middle ear infections are secondary to acute infections of the nose and throat, gaining access to the middle ear through the eustachian tube. Even our 15 per cent which was produced by surgery as the precipitating or exciting factor are, in the final analysis, just subacute subsiding nose and throat infections made active by ill-timed surgery.

One wonders if the careful application of these facts would not materially influence our entire attitude toward surgery of the middle ear and mastoid. Would it not be more logical to consider the great majority of these cases, not as a clinical entity, not as a mastoiditis, but in the broader light of merely an extension of an acute upper respiratory infection. Let us see how this might influence our surgical judgment in analyzing our clinical symptoms before adopting any surgical procedure.

Most of these cases appear to fall into the age group from eight to sixteen, with a much less percentage in early adult life. Let us look at the temperature chart of a typical case. It immediately reveals a septic temperature ranging from 99 to 105 degrees, with a marked variation between these two limits or perhaps exceeding these limits in both directions. This child will be in profuse perspiration, with one or both ears draining, and if x-rayed will probably show a distinct clouding of one or both mastoids. We unquestionably have an acute suppurative otitis media with definite mastoid involvement; but in the broader sense we also have an acutely ill, septic patient—one who is in no danger of complications from his mastoiditis. He has an acute mastoiditis but it is complicating an existing acute upper respiratory infection. Mastoid surgery is contraindicated.

A careful review of these cases seems to reveal that the temperature chart before operation is no criterion in deciding to adopt a surgical procedure. It does reveal that a high temperature—particularly of the intermittent type—means that the infection is not localized, and it is much better to wait. The temperature chart is far more important as a diagnostic sign in the postoperative period where a sharp elevation surely means some surgical complication.

Let us now turn to the blood picture. Herein perhaps lies the most valuable single diagnostic factor. We have shown that the great majority of acute mastoiditis is due to the various strains of streptococci, and these organisms certainly react in a very definite manner upon the blood stream of an infected patient and serve as a criterion in judging the severity of the infection and the patient's ability to combat the disease. The total leucocyte count will range from 12,000 to 30,000, with from 40 to 60 per cent of polymorphonuclear cells. If the white count is above 15,000 (taken as an arbitrary figure) it is a definite indication that the infection is not localized in the mastoid process. This child is septic. We are still dealing with an acute upper respiratory infection complicated by a superimposed acute mastoiditis. This is further confirmed by the marked "shift to the left" of the Schilling differential, and as a prognostic factor, the further the "shift to the left" the sicker the patient with whom we are dealing. Surgery is definitely contraindicated. Safer, quicker and easier recovery will award the delay of any surgical procedure until the temperature is down to an even regular level, the total leucocyte count reduced, the percentage of polymorphonuclears increased and there is a definite "shift back to the right" of the Schilling-Kolmer differential white count.

A word as to the pathology of acute mastoiditis. When considered developmentally and anatomically, the mastoid process is merely an extension of cancellous bone laid down

around the mastoid antrum, which is a part of the middle ear. If the infection enters through the eustachian tube to the middle ear, then an involvement of the mastoid process must logically be considered just an extension of a pre-existing infection by direct continuity of tissue. If this be true, then every case of acute mastoiditis has at some stage resolved itself into a borderline diagnostic differentation between an acute suppurative otitis media and an acute mastoiditis. It logically follows that even in the early stage of middle ear infections or mastoiditis many of the old classical symptoms of acute mastoiditis may naturally be present. I refer particularly to tip and antrum tenderness; prominence of the emissary veins; swelling of the soft tissues; profuse discharge; and last, for me, that very indefinite much discussed sagging of the posterior canal wall. If these cases are operated upon at this stage we will find the surgical pathological report reading something like this: "The usual postauricular incision was made with much bleeding. The periosteum was hemorrhagic and edematous. When the mastoid process was uncapped, the cells were filled wtih mucus or mucopurulent discharge. There was marked hemorrhage throughout the entire operation." There may or may not have been cell destruction. At this stage let us go back to our x-ray report and we will perhaps find a clouding of the mastoid cells, with some cell destruction. Again, this case was not an acute mastoiditis when viewed in the light of a clinical entity, but rather an extension of an acute upper respiratory infection.

We feel that at this stage the patient should be treated symptomatically. Brisk saline laxatives, antipyretics and sedatives in sufficient doses to control temperature and pain; forced fluids, both by mouth and with saline and glucose intravenously, when indicated; hot irrigations to the throat; tightly shrunken nasal mucous membranes, and postnasal applications of equal parts of tincture of metaphen and glycerine; frequent cleansing of the external auditory canal, preferably using the dry method; paracentesis, if and when necessary to promote free drainage; and last but not least, that panacea for the treatment of all acute streptococcic infections, small repeated blood transfusions.

In these remarks I have quoted freely from the reports of the larger clinics and have tried to picture the acute surgical mastoid anatomically, clinically and pathologically as an extension from and an integral part of an acute suppurative otitis media resulting in turn from an acute upper respiratory infection. I have tried to evaluate the clinical findings in the light of indications for and against surgical interference. In concluding, I believe that if we will study our acute mastoids from this point of view we will find it unnecessary to operate upon nearly so large a percentage as we have in the past. I know that those which do come to surgery will award us by quicker, safer and happier convalescences.

If these conclusions are of any value in assisting you in your interpretation of the surgical aspects of the acute mastoid, this paper will have served its purpose; if you cannot agree with all of these statements, that too will serve to crystallize an active discussion, which, in the final analysis, forms the stepping stones to that indefinable something which we have seen fit to term "keen surgical judgment."

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WORKMEN'S COMPENSATION ACTS: DEATH FROM SUNSTROKE

Death from exposure to the elements, including the heat of the summer and the cold of the winter, said the Supreme Court of Iowa, is not compensable if the hazard is the same to which the general public is exposed. For compensation to be recoverable for death from sunstroke, the deceased must have been subjected to a greater hazard from heat than that to which the public generally in that locality was subjected. This distinction is recognized by all the authorities.—*Illinois Medical Journal.*

SOME SEVERE COMPLICATIONS OF PARANASAL SINUSITIS*

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IN THE whole field of medicine there is no subject which demands the absolute coöperation of all the branches of our profession as that of the proper diagnosis and treatment of the complications which may arise from paranasal sinusitis.

Generally the burden falls upon the family physician who upon observing his patient at the bedside with nothing to assist him but his history, symptoms and physical findings must recognize that he is not dealing with one of the many acute, and most times self-limited diseases but is confronted by something which will take the combined skill of himself, the röentgenologist and the otolaryngologist.

Within the past few years much has been written upon this subject, and since the complications which might result from paranasal sinusitis are so many it is best to confine ourselves to a few specific cases which have come under our personal observation.

Two cases which I wish to present have several things in common.

(1) Both became infected while swimming.

(2) The frontal sinuses were the real offenders although there was some clouding of most of the sinuses as demonstrated by x-ray findings.

(3) In each case there was an osteomyelitis of both the anterior and posterior plates of the frontal bones.

(4) Both developed intracranial complications.

Case No. 1: C. B., a well developed white male, aged twelve years, had been swimming in the Ohio river, June 4 and 5. In the evening of June 5, he developed a headache which was not severe in the beginning but gradually grew worse. Upon June 9, his parents noticed some swelling of both upper eyelids and forehead. Several days later his family physician was called and a small incision was made in the midline of the forehead at the point of maximum swelling and a small amount of pus was obtained.

As his condition did not improve he was hospitalized June 19, 1935, at which time his temperature was 103 degrees, rectal; pulse, 110; respirations, 20; red blood count, 3,770,000; hb., 80 per cent; white count, 11,900, with 79 per cent polymorphonuclear leucocytes; blood culture, negative. Physical examination was negative except for his head. According to the progress notes there was a large swelling over the forehead and upper lids of both eyes. This swelling was warm, tender and red. The eyelids could not be opened. The x-ray diagnosis was "subperiosteal abscess in frontal area. Probable bone involvement of the anterior walls of the frontal sinuses and nasal bones. Left antrum and both frontal sinuses cloudy."

On June 20, an incision over the root of the nose, through the periosteum entered a large abscess cavity from which several ounces of thick, highly fetid pus was evacuated. The cavity was loosely packed.

From this time on the patient's general condition was satisfactory except that he complained of very severe headaches. On June 22, he came under my observation.

He was running a fever of about 100 degrees rectal; the respirations were 20, but during the previous night his pulse had dropped from 80 to 60 beats per minute. He was given 400 c.c. whole blood the following day and a more extensive operation was agreed upon.

After proper preparation an incision beginning in the midline at the base of the nose

*Read before the Eye, Ear, Nose and Throat Section at Fairmont, W. Va., June 8, 1936.

up to the hairline was made, then incisions from the midline externally about five m.m. above either eyebrow. When the skin and soft tissues were dissected loose there was an area about the size of a quarter involving both anterior plates of the right and left frontal sinuses but more to the right. This was completely necrotic. This area was removed with a curette but since the whole of the anterior plates of both the right and left frontal sinuses were markedly diseased they were removed. There was a large amount of pus and granulation tissue in either frontal and when this was removed a small fistula was discovered at the superior limit of the right near the midline through which pus was oozing. When the fistula was enlarged it was found that there was a perforation through the dura and that an enormous amount of pus was being forced under a great deal of pressure from this subdural abscess.

About one-half hour before the patient was taken to the operating room he had suddenly become unconscious and his pulse had dropped to 40 per minute. When the pus was evacuated his pulse at once raised to 90, 100 and then 110. When the nitrous oxide anesthesia was removed he was perfectly rational. Following this procedure he was given 500 c.c. of 10 per cent glucose intravenously.

The following days saw a great improvement. His supportive treatment consisted of blood transfusions and glucose intravenously. He had little or no headache, and the pulse remained about 100. At no time during his illness did he show any neurological findings except for the twenty-four hours before operation he complained of his neck being stiff. Owing to the swelling of his lids an eye ground examination could not be done.

On the morning of July 2, he suddenly developed Cheyne Stokes breathing and expired within a few minutes.

Several blood cultures which were made during his stay in the hospital were negative. Culture of pus from the subdural abscess showed staphylococci and pneumococci. Also a gram negative bacillus of the protean group.

Case No. 2: H. B., a poorly developed white female, 19 years of age, was admitted to the hospital September 10, 1934, giving the history that about one month previously she had been swimming. For the first five days after this she was able to be up and about although she was suffering from a severe headache which was confined to the frontal region. However, for the past twenty-four days she had been bedfast. Several days before admission she noticed there was a swelling on her forehead above the bridge of her nose which was very painful to the touch. Physical examination was otherwise negative. The day following her admission this mass was incised by her family physician and about one and one-half ounces of pus extracted. She remained in the hospital eight days during which she received 500 c.c. of whole blood. On September 18, 1934, she was discharged apparently much improved and having but a slight amount of purulent discharge from the wound.

Until September 13, 1934, her condition was very satisfactory but at this time she suddenly became much worse. The following day she was admitted to the free service of the hospital where she came under my observation.

Examination disclosed a very poorly nourished white female, totally unconscious and suffering from frequent convulsive seizures. Physical examination was essentially negative with the exception of her head. All over the area covering the frontal bones there was marked edema. Free pus was exuding from an incision which had already been made and through which a large amount of granulation tissue was protruding. The temperature was 98 degrees rectal; pulse, 72; respirations, 22; blood pressure, 110/78. Report of the x-ray was "the skull shows an osteitis involving the frontal bones. Both anterior plates are apparently destroyed." Eye ground examination was negative.

Owing to the very critical condition of

the patient, immediate operation was decided upon and after giving her 500 c.c. of glucose intravenously the skin and soft parts covering the frontal bones were reflected. There was a large amount of granulation tissue protruding from both right and left frontal sinuses. After removing both anterior plates each sinus were cleaned out with a curette, the contents being pus and granulation tissue. There was a fistula leading through each posterior plate from which very foul smelling pus was being expelled under pressure. The necrotic bone which was removed consisted of almost all the posterior plates of the frontal sinuses. After a large amount of pus was evacuated the dura was examined and except for its being quite injected appeared healthy. The wound was loosely packed with vaseline gauze and left open for free drainage.

When the patient was taken to the operating room she was unconscious. Shortly after we began instrumentation which was done without anesthesia she apparently became pulseless and stopped breathing. Artificial respiration along with injection of adrenalin into her heart muscle and other stimuli were administered which improved her condition temporarily but during the course of the operation this occurred three times and each time we felt that her condition was hopeless.

After removal to her room another 500 c.c. of 10 per cent glucose was given intravenously and the following day 500 c.c. of whole blood. From this time on until January 15, 1935, the patient was in a semiconscious state one day and appeared rational the next. Except for a few occasions she was incontinent the whole time. The wound of her head was dressed every other day and she was given nine transfusions along with other supportive treatment. At this time she complained of double vision. Eye examination showed the ocular movements free and equal and the eye grounds negative. On January 19, 1935, she developed a paralysis of the left external rectus muscle and upon examination of her eye grounds a beginning choking of the left disc was found.

At this time the neurologist on service was called and his probable diagnosis was:

(1) Brain abscess left frontal lobe.

(2) Extradural abscess of the left frontal region.

The patient was transferred to Dr. John O. Rankin's service, who on January 23, 1935, evacuated a left frontal lobe abscess which contained several ounces of pus. Her condition improved for a few weeks and then she again became stuporous. On March 3, 1935, he again operated and his report is that "An abscess containing about three ounces of pus in the anterior portion of the left frontal lobe about one and one-half inches under the cortex was evacuated."

From this time her condition steadily improved and on April 18, 1935, she was discharged from the hospital. At the time of her discharge the paralysis of the left rectus muscle had completely cleared and her physical condition was most satisfactory.

Case No. 3: E. F., aged 30. Until 1930 this patient, a white female, gave the history of having had no respiratory infections except for an occasional slight cold. During that winter she developed pneumonia. From this time she had a chronic cough which would not respond to treatment, and a severe headache beginning during her illness had remained constant since. Dr. Robert J. Reed, Jr., was called and on March 26, 1930 had her removed to the hospital for observation. On March 28, 1930, the patient was seen in consultation with Dr. Reed. At the time of her admission she complained of cough, hoarseness and severe generalized pain in the chest.

Physical examination showed marked tenderness over both antra. The septum was deflected to the left and the inferior turbinates greatly swollen. There was considerable muco pus in each nostril. Indirect laryngoscopy disclosed a large amount of thick yellow pus covering the vocal cords.

Upon examination of the chest the expan-

sion was equal. Percussion was resonant. Breath sounds were loud and blowing with numerous fine crepitant râles which were heard mostly on expiration.

X-ray studies were as follows:

"There is marked clouding of both antra and the ethmoid cells on the right side.

"There is a general diffuse infiltration of the chest extending well into the periphery. Also evidence of retention in the peripheral air sacs and definite infiltration in the upper right lobe. There are no defined tubercles."

X-ray diagnosis:

"Chronic infectious bronchitis and pneumonitis."

The blood count was practically normal and the Wassermann negative. No tubercle bacilli or fungi were found in repeated examinations of the sputum. Pneumococci and streptococci were present each time.

After irrigating each antrum daily, from which large quantities of thick yellow pus was obtained, the patient was discharged April 3, 1930, much improved.

However on April 13, 1930, she was readmitted to the hospital in a moribund condition due to a sudden obstruction of the larynx. Dr. Reed did an emergency tracheotomy and found the trachea filled with a purulofibrinous exudate. Immediately following the opening of the trachea a large quantity of this material was expelled. During her stay in the hospital inframeatal openings were made and she was discharged May 10, 1930, after the removal of the tracheotomy tube.

As the condition of her chest did not improve she was brought in for further study. A bronchoscopy was done July 7, 1930. Both false and true vocal cords were very edematous. The lumen of the larynx was narrow. The trachea showed a marked inflammatory reaction.

There was a brownish deposit looking like coffee grounds, beneath which the mucous membrane was very red and bled easily. A biopsy was not done owing to the condition of the patient. That night it was again necessary to do an emergency tracheotomy due to the edema following instrumentation. As we were unable to reach a satisfactory diagnosis and after one exposure of deep x-ray therapy failed to benefit her, she was removed to one of our large mid-western clinics.

After being under observation several weeks and following the removal of some tissue from the trachea and bronchi by means of bronchoscopy the pathological diagnosis was: "Squamous cell carcinoma of the bronchi." The treatment suggested was that deep x-ray therapy be used and that her pain be controlled with morphine. These instructions were followed and the patient began a slow recovery.

One year later with the exception of very severe headaches her physical condition was somewhat improved. However, by this time she had become a confirmed morphine addict. While in the hospital under treatment for this habit we investigated her antra and finding the inframeatal openings practically closed; they were enlarged and the antra found to contain a considerable amount of pus. Daily irrigations were begun and continued for several months until they finally became pus free. At that time our röentgenologist made a series of most interesting studies of her chest and his diagnosis was as follows:

"Chronic bronchitis with a moderate amount of peribronchial thickening, nontuberculous and non-malignant."

From this time on her condition steadily improved until she regained her normal health. She was also able to overcome the drug addiction and today works from early morning until late at night assisting her husbind in the restaurant business.

This case certainly was most interesting from the standpoint of diagnosis and while she was thoroughly studied we were never able to agree upon the pathological condition which existed in her chest. However, we all agree that the antra were the causative factor and that there was no malignancy of the lungs.

DRUG ERUPTIONS*

By HOWARD T. PHILLIPS, M. D.
Wheeling, W. Va.

ERUPTIONS caused by different drugs given internally for the treatment of some systemic condition are not uncommon. However, with the exception of iodine, bromine, phenolphthalein and one or two others, these eruptions are seldom distinctive or characteristic enough to make the diagnosis by appearance alone.

In the majority of cases there is an acquired sensitivity to the drug in question so that the skin manifestation does not appear until many doses have been taken. On the other hand we occasionally see a patient who has a true idiosyncrasy and an immediate reaction following the initial dose (e.g. quinine, serums, etc.) or lesions may come years after cessation of the ingestion of the drug (arsenical keratoses). It is supposed by some authorities that the absorption of certain medicinal agents causes the formation of substances which act as foreign proteins and these in turn give rise to anaphylactic reactions in susceptible persons. However, local irritation due to the presence of the drug in the skin glands will also cause eruptions in the absence of anaphylactic phenomena.

In addition to the medicine taken internally there are also certain reactions in susceptible patients to a number of drugs applied locally, causing typical venenatas (e.g. hair dye, mercury, sulphur, etc.)

The eruptions vary from the simplest erythema to gangrene, may be limited or generalized, but usually symmetrical, and when limited to special areas, the face, neck, forearms and below the knees are the most common sites affected. They are more common in women and children, and defective elimination and a neurotic temperament are said to influence their occurrence.

Skin lesions or rashes appearing suddenly, with symmetrical arrangement, more or less generalized distribution, brighter color than the disease they simulate, and itching without constitutional disturbance all suggest drugs as a cause and a careful inquiry will often disclose the one at fault.

There are over two hundred drugs capable of causing eruptions (Andrews) and cause practically every type of lesion—one drug producing several different types of lesions, or different drugs may cause similar types of eruptions.

Iodides: Common—erythematous, papular, nodular, pustular, bullous, carbuncular, vegetating—commonest acneiform.

Bromides: Fairly common — develops slowly, usually persistent. Erythematous, papular, pustular, bullous, furuncular, urticarial condylaform and vegetating. Sometimes suggest lues.

Belladonna: Not uncommon. Erythematous or scarlatiniform. Sometimes intensely itchy.

Barbiturates: Exanthematous rashes with fever.

Antitoxins: Urticarial.

Arsenicals: Particularly pentavalent series. Eczematous followed by desquamation, also keratoses.

Novocaine: Vesicular, intensely itchy; differentiate from fungus.

Phenolphthalein: Fixed pigmented areas, single or multiple, bullous.

Silver: Argyria.

Thallium Acetate: Alopecia.

Treatment: Withdrawal of drug often sufficient. Local remedies for palliation of symptoms (itching, burning, infection, etc.) but sometimes necessary to aid elimination by use of other internal treatment (sodium chloride for bromine and iodine intravenously; sodium thiosulphate for other heavy metals).

*Presented before the West Virginia State Medical Association, Fairmont, on June 10, 1936.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Echoes of the success attained by the use of BCG in Europe continue to reach the United States. Laymen are asking their physicians why tuberculosis vaccination as practiced in France is not in more common use here. Conflicting reports and claims have made it difficult for the busy practitioner to form a fair judgment. The report of G. Gregory Kayne of England who made an impartial study of BCG vaccination in western Europe should help us in evaluating it. Abstracts of the report follow:

BCG in Western Europe: The author submits the following summary and conclusions:

"BCG produces a very partial immunity, which is effective only if the vaccination is combined with other methods of prophylaxis. Certain conditions as regards the vaccines and its administration must be fulfilled. The indication for its use must depend on the amount of tuberculosis and the extent of the antituberculosis organization in each country; but, in most European countries at any rate, it should be confined at present to infants and children in contact with tuberculosis in their homes. The vaccination of tuberculin-negative adults likely to be in much contact with tuberculous patients must be considered. In organizing BCG vaccination in a country it is essential that the vaccine be prepared on the spot, and that each country should itself work out the details of the application according to results obtained, and the aim in view, that is, the scientific determination of immunity produced by BCG, or having accepted the latter as a fact, merely the use of the method for prophylaxis. BCG does not, I consider, mean reorganization of our present scheme of dealing with tuberculosis; it would best be applied working hand in hand with it."

These conclusions are based on observations of recent work at European centers visited during the past eighteen months. The first stumbling block to a just appreciation of the effect of BCG is the difficulty of approaching the subject with an unbiased mind. The vast literature, extravagant claims, polemics, untrustworthy statistics have confused the picture. BCG has suffered scientifically from bad publicity because it has been too well advertised and there is a tendency to overlook the fact that exaggerated claims may hide a much smaller but nevertheless real benefit.

Evidence seems to support the contention that (1) BCG properly administered and controlled does not cause progressive tuberculous lesions—it is therefore safe. (2) There is general agreement that there has occurred no increase in the original virulence of BCG when grown according to Calmette's last instructions.

The evidence that BCG is a "fixed virus," as Calmette claimed, is not thoroughly substantiated. Until recent years, presumably when BCG was less attenuated than it is now, its virulence could be increased, when suitably grown, so as to produce progressive tuberculosis in highly susceptible animals.

Determination of immunity is a matter of the utmost difficulty. The first step is to prove that the vaccine has actually entered the tissues and reacted with them. This implies the existence of three conditions.

(1) *The number of living bacilli in the emulsion should, as far as possible, be constant.* With present methods it is advisable to administer the emulsion within a day or two of its preparation.

(2) *All the bacilli in the vaccine administered should gain entrance to the tissues.* Only subcutaneous, intracutaneous and intramuscular injections (parenteral method) fulfill this requirement. Administration by mouth results in a very variable loss of the vaccine from vomiting, possible adhesions to the pharynx, or inhalation with coughing up and chiefly in the feces.

(3) *A positive tuberculin test should be obtained,* which, if the child has in the interval not been in contact with tuberculosis, is an indication that the tissues have reacted with the bacilli. But, the author cautions, the Pirquet test when used alone is not sufficiently sensitive. For accurate work the Mantoux test carried out to 1 mgm. should always be used.

Successful vaccination does not, however, prove immunity. Work with animals seems to indicate that a definite protective mechanism is stimulated by BCG though there are some contradictory experimental results. In the human being determination of immunity is manifestly more difficult. Much criticism has been leveled at statistics submitted by various workers to prove the immunizing power of BCG.

Assuming that vaccination does produce an immunity the next point to decide is how long this

partial immunity lasts. Unfortunately, there is no criterion whereby we can judge this in man. Scientifically accurate determination of the effect of BCG in man is impossible, because it is an effect which cannot but be small. *A priori* evidence (lesions and tuberculin hypersensitiveness following vaccination, and K. A. Jensen's inhalation experiments on guinea pigs) and two or three statistical investigations containing less of the gross errors indicate that (1) BCG vaccination produces a very partial immunity, which is only likely to play an effective rôle when it is combined with other methods of prophylaxis; and (2) the duration of the immunity varies considerably, but is generally between six and twelve months; hence, it is important that a vaccinated child, who must return to tuberculous contact in the home, should do so as soon as it has become tuberculin-positive after the vaccination.

The author then discusses the rational basis of BCG vaccination and states that in addition to the essential conditions already mentioned the following considerations must govern:

(4) *A suitable route of administration must be employed.*

(5) *A dose of vaccine should be used which will produce tuberculin hypersensitiveness as rapidly as possible with the least inconvenience.*

(6) *The children should not be in contact with tuberculous contagion until a positive tuberculin test after the vaccination is obtained.*

(7) *Only children definitely risking contact with tuberculosis should be vaccinated.*

In concluding the author says:

"Indeed, while paying a tribute to Calmette, who fought against very heavy odds at times to generalize a method which he believed to be a complete solution to the problem of tuberculosis in man, one feels that the cause of BCG would have been better and sooner served if he and his followers had remembered the words which the famous Ernest Renan once said to an overenthusiastic Pasteur:

'Truth, Sir, is a great coquette; she will not be sought with too much passion, but is often most amenable to indifference. She escapes when apparently caught, but gives herself up if patiently waited for; revealing herself after farewells have been said, but inexorable when loved with too much fervour.'"

BCG in Western Europe, G. Gregory Kayne, Am. Rev. of Tuberc., July, 1936.

TWENTY-FIVE YEARS AGO

(From the December, 1911, issue of the West Virginia Medical Journal.)

Dr. A. P. Butt, state secretary, announced that the next annual meeting would be held at Webster Springs on July 10, 11 and 12, 1912.

The Potomac Valley Medical Bulletin, official publication of the Grant, Hardy, Hampshire, Mineral County Medical Society, has just been established and the first number issued to members.

President C. O. Henry has appointed the following committees for the coming year:

Medical Education: C. A. Wingerter, Wheeling, chairman; C. L. Holland, Fairmont, and J. R. Bloss, Huntington.

Council on Legislation, A. M. A.: C. R. Ogden, Clarksburg.

Drs. Ackerman, Reed, Schwinn, Caldwell, Noome, Hildreth and Etzler attended the recent surgical clinics in Philadelphia.

Dr. H. M. Campbell of Parkersburg delivered a very interesting paper on "Placenta Prævia" before the Little Kanawha and Ohio Valley Medical Society on November 2.

Among scientific papers in the December, 1911, JOURNAL: "What Shall We Teach the Laity," by Dr. Roy Ben Miller, Parkersburg, and "Recurrent Circumscribed Edema," by Dr. B. G. Capito, Charleston.

Position Open—Paying $1200 per year and maintenance. Open to well qualified physician. Preference given to West Virginian. Give references in first letter. Address "Institution" care State Medical Journal, Wheeling, W. Va.

FROM OTHER JOURNALS

FOOTBALL AND THE MEDICAL PROFESSION

The medical profession is becoming more concerned with football injuries. And well it may, for as surely as its work increases in the summer as a result of the swimming pool, its work increases in the fall as a result of the gridiron. Books by doctors and articles in the medical press are appearing frequently on the subject, analyzing statistics and suggesting remedies. It is hoped that these studies will find their way into the hands of those who control college and high school athletics, and that they will help crystallize into sane action the wavering opinion

of parents and public in general. To the rules committees must be entrusted the changes in plays necessary to create a safe game, but in the meantime to the physician belongs the responsibility for the care and treatment of the injured.

It is apparent that medical science can teach football coaches how those under their tutelage can play the game with a minimum of physical risk. The general principles governing fractures and how they are sustained are well known and can be applied to the athletic field. Some progress has been made due to a study of the incidence of various injuries, and supporting and protecting apparatus is better than it was formerly.

Football coaches do not seem to realize the increased risk of continued play to the slightly injured, tired or groggy player. Coaching benches are far from the line of play. Coaches follow the progress of the ball and are absorbed in the major strategy of the game. They want to win. Their own future depends upon winning. They are ill-fitted to decide when a player's physical condition is a menace to himself. A disinterested physician should be an official of every game. He should follow the ball from the sidelines on the line of scrimmage. He should be provided with a whistle. He should order from the game any player on either side whose physical condition makes further play dangerous. He should go immediately to the aid of any injured player, determining the seriousness of the injury and deciding whether or not he may remain in the game. The practice of jerking supposed dislocations back into place or of carelessly moving the injured from the field should stop. The danger of compounding a simple fracture by inexpert manipulation or injudicious handling should be realized and the injured player usually should be borne from the field on a stretcher.

The locker room treatment admired by athletes and boasted by well-intended athletic directors should be under medical supervision. If it were, heat and rest would take the place of jerking, pulling and massaging that so frequently is the lot of an injured extremity. Even when the damage is confined to the soft parts, it may involve muscle, tendon, blood vessel and nerve in a variety of combinations, most of which cannot possibly be helped by the big hands and powerful liniments of the strong-armed force reigning and reverenced in the locker rooms of high school and college —*Virginia Medical Monthly*.

UTILIZATION OF IRON SALTS

Secondary anemia is often dietary and though copper and other elements may be important in blood formation, in many cases large doses of iron will restore the blood to normal more promptly than any other medication. The question of the form in which iron should be administered has been much discussed. Iron anemia is common in districts in which the water is full of iron, and colloidal iron seems not to improve the blood picture. It has been said that only ferrous iron may be utilized and that ferric iron is ineffective. Pernicious anemia of course is scarcely affected by iron. The milk anemia of rats is influenced by both ferrous and ferric compounds.[1]

Furth and Scholl[1] studied the absorption in loops of rabbit intestine of several iron preparations in common use, and the toxicity of the materials. Ferrous sulphate was less completely absorbed than ferrous chloride. The absorption of ferric chloride was only 19 per cent in three hours, of an organic ferric compound 30 per cent, and twice as much ferrous chloride (61 per cent of the total) was absorbed in the same time. An acid reaction in the intestines delayed the absorption. The minimal lethal dose for mice was tested, and it was noted that the quickly absorbed compounds were no more toxic than the slowly absorbed. The belief is therefore confirmed that ferrous salts should be more effective than ferric in the treatment of secondary anemia, and that of the ferrous compounds some are more effective and less harmful than others.

Raynaud's Disease.—In Raynaud's disease with sclerodactylia, it is suggested that the tight skin physically constricts the blood vessels, preventing adequate circulation in the finger or toes. This type of circulatory deficiency is not benefited by sympathectomy. The arteries still fail to dilate. If a normal finger is bound as in sclerodactylia, it will give the same reactions.[1] Intermittent suction, as described by Hermann and Landis, temporarily releases the skin pressure and increases the blood supply in cases of this type.

Barbiturates.—The question of addiction to sedatives assumes increasing importance with their constantly increasing use. According to Stanton,[2] of Western Reserve University, rats which receive a barbiturate over a period of weeks do not become addicted to it as they do to morphine. They do not show increased irritability when it is abruptly with-

(Continued on page 579)

PRESIDENT'S PAGE

The State Department of Public Assistance will have charge of administering our maternal and child welfare. The chairman of these two committees, namely, Dr. James R. Bloss and Dr. Andrew Amick have met with Dr. Thomas Blake of the State Health Department and have formulated a set of rules governing the administration of these two welfare organizations which are exceptionally fine.

The State Health Department is very anxious to keep the medical profession entirely and completely in control of the administration of this work. Next month the full committee on maternal and child welfare will meet to pass on these rules and regulations, and beyond a doubt, they will be approved.

These committees have given much thought and much work in the interest of our State Medical Association. I hope the component societies will be able to go along with the program that they shall outline. We are at the zero hour. The organized medical association of our state must either act and direct these agencies or else the work will be carried on by the politicians which will be to the detriment, not alone of our profession, but to all the people which these agencies are seeking to serve.

This is my swan song. Next month you will have another leader and a very capable and courageous leader he will be. I command you to the care of the eminent physician and surgeon, Dr. W. S. Fulton. I hope, and believe, that you will give him the same loyal cooperation that you have given me. Follow him with confidence and he will lead us to glorious victories.

Charles G. Morgan
President

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SOCIAL SECURITY

Probably within the next 30 days we will see the new State Department of Public Assistance in operation. The State Advisory Committee, of which Dr. W. S. Fulton is a member, has been almost constantly at work for the past five months on administrative details. Our own Association Advisory Committee has worked many hours with the Department on the various phases of Social Security involving the medical profession. As of this date, the work is just about completed and the various manuals of instruction are ready for the press. With the New Year, the new plan should be in full swing.

Medical participation under the Public Assistance Act involves many different phases of medical practice. Perhaps the most familiar to Association members is medical assistance to the indigent; formerly known as "medical relief." Medical services rendered to indigent persons in their homes will be almost identical to the old "medical relief" setup. Practically the same fees and the same mileage allowance will prevail. There will be a discretionary allowance of twenty-five dollars for unusual cases. The obstetric fee will be $15, plus two dollars for prenatal and postnatal visits.

One of the most important changes in the old "medical relief" plan is the inclusion of hospitalization for indigents and of the necessary medical and surgical service incident thereto. To cover these medical and surgical services, the Association's Advisory Committee has worked out a complete system of fees which has been recommended to the State Department. This fee schedule is lower than the average minimum fee schedule of the larger towns and cities but it is undoubtedly higher than would be charged a destitute patient. Considering that all patients covered by this fee schedule would be indigent persons on public relief, the Committee fixed the schedule at approximately 65 per cent of the standard fees in the larger cities.

The adult physical rehabilitation program is also familiar to most of the Association members, as this program was conducted for more than a year by the old West Virginia Relief Administration. The purpose of this program is to restore adult men and women to gainful employment through physical rehabilitation who are now unable to secure gainful employment because of some physical handicap. Here, again, the schedule of operative and other fees are approximately 65 per cent of the standard fees in the larger cities.

The Crippled Childrens' program will continue with few if any major changes. This department has already been transferred from the old Department of Public Welfare to the Department of Public Assistance. An advisory committee of three orthopedic surgeons will guide the policy and activities of this department. This committee, as provided in the new statute, will be selected from a list of qualified orthopedic surgeons submitted by the West Virginia State Medical Association.

In addition to the above programs involving medical participation, the new Public Assistance Act also includes Aid to the Blind and Aid to Neglected Children. Physical examinations are required in the handling of both groups while further provisions are made for treatment of blind children by qualified eye specialists.

It is hoped that the Department's manual of instruction, which will include fees and rules and regulations governing the various types of medical service, will be published in the early part of this month. Every effort

will be made to secure sufficient copies of this manual so that every physician in the state will be able to procure one.

DELINQUENT MEMBERS

So far this year we have had very little to say about delinquent members. We bring up the subject at this time simply as a warning that all delinquent members for 1936 will be automatically dropped from the roster of members of the Association on January 1, 1937. All doctors who are thus dropped may not be reinstated unless they petition their respective county societies as new members and secure the necessary vote for admission.

One reason so little has been said about delinquent members is because of the unusually small number. There are less than 25 delinquents in the entire state at the present time. On the other hand, more than 100 new members have been admitted during 1936.

To the few remaining members of the Association who are delinquent in their dues, we suggest immediate payment before it is too late.

To the secretaries of county societies that still have delinquent members, we suggest that you bring up the names at your next society meeting. If the society feels that a delinquent member is delinquent because of inability to pay, but otherwise interested in organized medicine, we hope that every effort will be made to keep him in good standing. Unless there is such a feeling, perhaps it would be best to allow the delinquent memberships to terminate. The Association desires the support of every ethical doctor in the state, but at this particular time it is not a good policy to carry too much dead wood.

A. M. A. SCIENTIFIC EXHIBITS

All applications for space in the Scientific Exhibit of the American Medical Association for the annual session to be held at Atlantic City next June 7-11, 1937, must be submitted before February 1, 1937. The applications may be sent either to one of the section representatives or to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois. Application blanks may be secured from the same source.

All applicants for space are urged to give the exact dimensions of cabinets and viewing boxes which they intend to use so that proper provision may be made. The exhibit spaces at seven and one-half feet deep, six feet high, and the width is governed according to the requirements of the exhibitor. No charge is made for scientific exhibit space, but the exhibitor must pay the cost of installing the exhibit and for the rental of any tables or chairs that may be necessary.

CONTROL OF SYPHILIS

During the last few years health officers and others interested in the control of syphilis and gonorrhea have heard much regarding the development of an efficient system of reporting these diseases. The United States Public Health Service has been requested to institute studies aimed at the improvement of morbidity reports for syphilis and gonorrhea. Meanwhile it has been necessary to continue the old system of collecting morbidity reports which has been in use in health departments for a decade or more.

The U. S. Public Health Service has recently called attention to the large number of health departments which fail to submit morbidity reports and efforts have been made to stimulate and encourage proper and prompt reporting. In spite of this, the monthly statements indicate a grave lack of interest, according to the authorities. Six states, Alabama, Colorado, Nevada, New Jersey, Utah and Wyoming, failed to make any report for the month of September.

Reports from West Virginia show that there were 1.18 cases of syphilis per 10,000 population reported for September, and .64 cases of gonorrhea per 10,000 population. The nation-wide average for syphilis is 1.86 new cases per month per 10,000 population, and for gonorrhea it is 1.27 cases per month per 10,000 population.

FOREIGN MEDICAL GRADUATES

We take this opportunity to congratulate the Public Health Council of West Virginia upon its resolution adopted on October 12, 1936, governing the licensing of medical graduates of foreign medical graduates. West Virginia has had a number of disconcerting experiences with foreign graduates and we feel that the Public Health Council cannot be too careful in examining the credentials and in passing upon the qualifications of these applicants.

The action of the Public Health Council will create no hardship upon any foreign medical graduate who has proper credentials and who has met with the general requirements of the Council. However, it will make it extremely difficult for any foreign graduate with improper or insufficient credentials to secure a West Virginia license.

The regulation adopted on October 12 is effective on January 1, 1937, and does not apply to graduates of Canadian or other medical schools which have been placed in the A classification by the Council on Medical Education and Hospitals of the American Medical Association. The complete regulation follows:

Effective January 1, 1937, every applicant for license in West Virginia, who is a graduate of a foreign medical school will be required to submit proof with his application that he is licensed to practice medicine in the country of his graduation and that he has served at least one year's internship in an approved hospital or that he has completed the fourth year of medicine at an American Class A medical college, as classified by the Council on Medical Education and Hospitals of the American Medical Association.

MEDICAL LICENSURE

At every session of the West Virginia legislature, attempts are made by both individuals and organizations to either change or "get around" the state's medical practice act relating to medical licensure. Individuals who are unable to pass our state board examination and who are not qualified to appear before the state board, attempt to secure medical licenses by special act of the legislature. Other groups, including the various cults, frequently seek changes in the medical practice act to lower the standards for practice and endeavor to fit the standards to their particular group.

Apparently the public is fully aware of the value of high standards for those who practice the healing art, for every effort made during the past 10 or 12 years to lower these standards has been futile. We hope that public sentiment will continue to support strict regulation of medical practice until all persons who desire to practice the healing art are required to pass the same examination in the basic sciences. Certainly there should be basic standards for all who attempt to treat the sick.

The Federation Bulletin published by the Federation of State Medical Boards of the United States recently had this to say on the subject of medical licensure and its public aspects:

"It seems difficult for the general public to appreciate that the main purpose of establishing legislative regulations for medical licensure is for the protection of the public as well as the individual citizen. In consequence there is much misunderstanding on the part of the public as to the purpose of the legal definition of licensure standards.

"The principles of licensure comprise two methods, the restrictive and the definitive. The former prevails mainly in this country and restricts any from practice except those who comply with certain regulations and conditions to carry on such practice. This is controlled principally by state board examinations. The second or definitive plan is the method of Great Britain and designates those who have complied with the required conditions of education and qualification, and leaves to the individual to choose the practitioner he wishes to employ. The significant effect of requiring all candidates for licensure to be examined by a state board has brought

about a complete separation between the functions of education and the functions of licensure.

"In spite of this evident misunderstanding of the purpose of medical licensure, the public is very receptive of all information regarding the achievements of modern medicine and surgery and the great possibilities of preventive medicine. The public is equally responsive to all efforts to advance the educational standards and training of physicians.

"There is considerable doubt expressed as to the efficacy of all forms of medical practice acts of a restrictive character, and legislation thus obtained does not always accomplish the purpose for which it is enacted. The time is opportune to consider the definitive principle of licensure and refer the responsibility of preparation and qualification to the medical schools. These institutions are more readily controlled by state boards by means of inspection and approval. This, with annual registration, adequate enforcement and disciplinary procedure, would insure to the public the highest standards of medical practice. Such a method would make a stronger appeal to the public mind than the older restrictive type of medical practice act."

OBITUARY

DR. I. B. JOHNSON

Dr. I. B. Johnson of Bayard, West Virginia, died on October 15, 1936, of cardiac decompensation. He was 64 years of age and graduated from the Maryland Medical College in the class of 1903. He was licensed in West Virginia the same year and has practiced in this state since that time, with the exception of his service with the Medical Corps of the United States Navy during the World War.

Dr. Johnson was a member of the Grant-Hardy-Hampshire-Mineral County Medical Society, the West Virginia State Medical Association and the American Medical Association. In recent years Dr. Johnson did postgraduate work at the New York Polyclinic and the College of Physicians and Surgeons, Baltimore. He was a member of the Masonic orders and the Odd Fellows.

COUNTY SOCIETY NEWS

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Pritchard Hotel, Huntington, on the evening of November 12 with a good attendance. The scientific program was presented jointly by Dr. F. C. Hodges and Dr. Ray M. Bobbitt on "Testicular Teratoma."

The Society Committee on Public Health Problems, headed by Dr. W. Byrd Hunter, is continuing its work on the Cabell County School Health Program and all members of the Society have been asked to participate in the immunization and health examination programs. Participating doctors will set aside from 3:00 until 4:00 o'clock each Friday afternoon during which time immunization for diphtheria, smallpox and typhoid fever will be given, together with health examinations, for elementary school children, and health examinations for high school children. The special fee schedule for this particular hour follows:

Elementary Children

Diphtheria (each injection)	$1.00
Schick test (each test)	1.00
Smallpox vaccination (each attempt)	1.00
Typhoid vaccine (each injection)	1.00
Health examination	2.00

High School Children

Physical examination	1.00

CHAUNCEY B. WRIGHT, *Secretary.*

CENTRAL WEST VIRGINIA

The Central West Virginia Medical Society held its regular quarterly meeting at Buckhannon on October 22, 1936. Visiting speakers were Dr. H. H. Haynes and Dr. W. W. Spelsburg of Clarksburg.

Dr. Haynes gave a very interesting paper on "Operations for Cancer of the Rectum." Dr. Spelsburg read a very interesting paper on "Conservative Diagnosis of Sinus Disease."

Dr. I. F. Hartman of Buckhannon was elected to membership in the Society.

The next meeting of the Society will be in January and will be held either at Sutton or Gassaway. Dr. C. C. Carson of Gassaway was named as chairman of the Committee on Arrangements.

Officers elected for the coming year were Dr. L. O. Hill, Camden-on-Gauley, president; Dr.

Everett Walker, Adrian, vice president; Dr. A. B. Bowyer, Buckhannon, secretary-treasurer.

A. B. BOWYER, *Secretary*.

G. H. H. M. SOCIETY

Dr. Morris Fishbein of Chicago, editor of the *Journal of the American Medical Association*, will be the principal speaker at the December 19 meeting of the Grant, Hampshire, Hardy, Mineral County Medical Society to be held at Romney. This will be a joint meeting with the neighboring Allegheny-Garrett County Medical Society of Maryland and a large attendance is expected.

PAUL R. WILSON, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held at the Ruffner Hotel, Charleston, on the evening of November 10, 1936. In the absence of the president, Dr. P. A. Haley, secretary, presided.

The scientific program consisted of a motion picture on "The Management of Pneumonia," which was sponsored by the Lederle Laboratories and discussed by Dr. Murray Ferderber of Pittsburgh.

A special committee of the Society was appointed to work out a county fee schedule for low-bracket wage earners. The Society also elected a nominating committee to nominate officers for the coming year at the December meeting. A Dutch lunch was served following the program.

P. A. HALEY, II, *Secretary*.

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held in the Municipal Building, Bluefield, on the evening of November 19 with Dr. R. R. Stuart, president, presiding. Dr. H. G. Steele was asked to serve as temporary secretary in the absence of Dr. C. T. St. Clair, Jr.

Under the head of new business, Dr. Steele presented a proposed amendment to the by-laws of the Society to raise the annual dues from $12 to $15 per year. This matter will be voted on at the next regular meeting.

The scientific program was presented by Dr. Albert H. Hoge and Dr. Charles T. St. Clair, Sr., both of Bluefield. Dr. Hoge gave a most interesting paper on "Gastrointestinal Allegry." Dr. St. Clair presented an unusually practical paper on "Broncho-Sinusitis Disease," with Dr. S. G. Davidson demonstrating with x-ray films the condition of the sinuses, and the lungs in these cases, comparing the latter with tuberculosis and silicosis of the lungs. These papers were discussed by Drs. Rogers, Steele, Hare and Harris, and closed by the essayists.

These practical and instructive papers read by the members of the Society, and the good natured atmosphere existing among all the members made everyone present feel as if we were having one of our old-time, old-fashioned meetings. The annual banquet and election of officers will be held at the December meeting of the Society.

H. G. STEELE, *Acting Secretary*.

MONONGALIA COUNTY

Dr. Robert L. Anderson of Pittsburgh was the guest speaker at the November 3 meeting of the Monongalia County Medical Society which was held at the Hotel Morgan, Morgantown. Dinner was served at 6 o'clock, following which Dr. Anderson presented a most interesting and practical paper on "Urology." There was a good attendance and a liberal discussion of Dr. Anderson's address.

G. R. MAXWELL, *Secretary*.

OHIO COUNTY

The third regular scientific meeting of the Ohio County Medical Society was held on Friday, October 23. The president, Dr. Robert Armbrecht, called the meeting to order and the minutes of the previous meeting were read and approved. The secretary announced the addition to the Society of Dr. R. D. Walter of West Liberty, W. Va.

Dr. Armbrecht introduced the speaker of the evening, Dr. Charles A. Doan of the Ohio State University. Dr. Doan described certain advances in hematology, particularly relating to the study of the blood iron content and blood volume. He reported in some detail the effects of a splenectomy performed for relief of congenital hemolytic jaundice.

Dr. Doan's paper was discussed by Dr. H. G. Little, Dr. H. R. Sauder and Dr. J. T. Thornton.

The fourth regular scientific meeting of the Ohio County Medical Society was held on Friday, November 6. The president, Dr. Robt. Armbrecht,

called the meeting to order at 8:45 p. m. No business and no clinical cases were brought before this meeting.

The scientific essayist of the evening was Dr. I. Newton Kugelmass of New York City. His subject was, "The Management of Hemorrhagic Diseases in Children." Dr. Kugelmass divided the subject into two groups of hemorrhagic diseases, one of which is produced by the failure of the clotting mechanism, the other which is produced by faulty structure or function of the blood vessel walls.

Dr. Kugelmass reviewed the physiology involved in the process of clotting or of failure of blood to clot. He pointed out certain medications which might or might not exert some influence on this mechanism.

The very excellent paper was discussed by Dr. J. T. Thornton, Dr. Russell C. Bond, Dr. R. J. Snider and Dr. W. M. Sheppe.

The fifth regular scientific meeting of the Ohio County Medical Society was held on Friday, November 20, in the solarium of the Ohio Valley General Hospital. The meeting was called to order by the vice-president, Dr. H. G. Little.

Dr. H. T. Phillips presented an interesting clinical case of congenital heart disease with an unusual degree of clubbing of the fingers.

The scheduled speaker of the evening, Dr. F. Coller of the University of Michigan, was unable to be present due to illness in his family. Dr. Coller's associate, Dr. Walter Maddock, also of the University of Michigan, addressed the Society. His subject was the postoperative care of surgical patients.

The subject of the address related particularly to the use of fluids in the acutely sick patient. The basis for the conclusions of the speaker rested on an accurate estimation on water intake and water output on patients during and after their operation. Dr. Maddock indicated the amounts of fluid which might be expected to be sufficient for patients under varying sets of conditions. He also discussed the use of salt, glucose and other ingredients of intravenous solutions.

Dr. Maddock presented a very excellent paper which was enjoyed by an audience of seventy-five members and guests. His paper was discussed by Drs. W. S. Fulton, J. A. Goodwin, J. T. Thornton and R. J. Snyder.

W. M. SHEPPE, *Secretary.*

PARKERSBURG ACADEMY

The regular monthly meeting of the Academy of Medicine of Parkersburg was held at the St. Joseph's Hospital on the evening of November 5, 1936, with Dr. H. H. Veon, president, presiding. During a short business session, Dr. Arthur R. K. Matthews was admitted to membership.

The first speaker on the scientific program was Dr. George Fordham of Powellton, who gave a most interesting paper entitled "Silicosis." Following this, Dr. Albert E. Russell of the United States Public Health Service, Washington, D. C., gave a very illuminating talk on the same subject, illustrated with lantern slides showing various stages of the silicotic lung. Discussion was opened by Dr. E. T. Goff. There were 26 doctors and a number of lay visitors in attendance.

BERLIN B. NICHOLSON, *Secretary.*

RALEIGH COUNTY

The regular monthly meeting of the Raleigh County Medical Society was held at the Beckley Hotel, Beckley, at 7:30 o'clock on the evening of November 16 with 25 members in attendance. A dinner preceded the meeting, after which Dr. Roy M. Hoover, orthopedic surgeon of Roanoke, Virginia, spoke on the subject, "Un-united Fractures." This was a very excellent presentation which brought forth a liberal discussion.

L. M. HALLORAN, *Secretary.*

GENERAL NEWS

AMERICAN UROLOGICAL

The Third Annual Meeting of the Southeastern Branch Society of the American Urological Association will be held in Charlotte, North Carolina, on December 4 and 5, 1936. Headquarters will be at the Hotel Charlotte, with Dr. Claude B. Squires as chairman of the Committee on Arrangements.

Essayists on the scientific program include Dr. Alexander Randall of Philadelphia; Dr. J. Dellinger Barney, Boston; Dr. Edgar G. Ballenger, Atlanta; Dr. N. G. Alcock, Iowa City; Dr. Charles M. McKenna, Chicago; Dr. Theo. M. Davis, Charlotte; Dr. Francis R. Hagner, Washington and Dr. Russell S. Ferguson, New York City.

DR. SMITH HONORED

Dr. Charles S. Smith of Nogales, Arizona, formerly of Beckley, West Virginia, has been appointed to the Arizona State Board of Medical Examiners by Governor Moeur and has accepted the appointment, according to a recent news item in the *Nogales Herald*. Dr. Smith is widely known throughout Arizona and was in charge of arrangements at the recent convention of the Arizona State Medical Association in Nogales.

Dr. Smith has many close friends in West Virginia, having practiced for many years in Raleigh County. He went to Arizona for his health and recently wrote one of his former colleagues that his health was completely restored. In this letter, he stated that he liked Nogales and his work there, but that he grew homesick for West Virginia from time to time.

COSMETICS AND EYESIGHT

Indiscriminate use of weight reducers, hair dyes and depilatories is causing serious injury to eyesight in the United States, according to a warning by Dr. Walter I. Lillie, in the current issue of *The Sight-Saving Review*, quarterly journal of the National Society for Prevention of Blindness.

Case stories of eye tragedies among his patients are cited by Dr. Lillie, and he gives the trade names of the "beauty products" which the victims used. Dr. Lillie is a practicing ophthalmologist in Philadelphia, and a member of the Department of Ophthalmology of the Temple University School of Medicine there. Writing on "Cosmetics Detrimental to Vision", he says:

"Individuals who use cosmetics are unwittingly subjecting themselves to visual dangers. We are all potential victims, because the present Food and Drug Act, passed in 1906, only requires the manufacturers of food and drugs to properly label their products but does not penalize the acts of adulteration and misbranding. False and fraudulent therapeutic claims must be proven before the product can be removed from the market.

"These two little words 'and fraudulent' compel the Government to prove that the manufacturer knows the customer is being swindled. This has prevented adequate control over quack or dangerous remedies. Extraneous advertising of these products through the newspapers, magazines and radio is without Federal control, and because of this we are constantly reminded of the wonderful benefits and cures that will be derived from their use.

"Today the billion-dollar-a-year cosmetic industry is not subject to any Federal regulations unless the labels bear medicinal claims, which, of course, never occurs. There is no legal way to protect the public against dangerous cosmetics. Toilet preparations which are known to be harmful by the medical profession cannot be taken off the market regardless of any disfigurement or injury they may inflict. Although poisonous cosmetics that ravage their users by paralyzing, blinding or disfiguring them are the exception rather than the rule, the medical profession should be alert to the possibilities and probabilities of visual and bodily damage which may result from their use.

"The untoward visual effects may be temporary or permanent, depending upon the nature of the ingredient or the amount used, and the tolerance of the individual. The eyes are usually affected in one of two ways, either through direct contact with the preparation or indirectly through the absorption of the poisonous ingredient in the body. Three groups of cosmetics have the potentiality of producing severe ocular damage, namely: (1) weight-reducing preparations, (2) hair dyes, and (3) depilatory ointments.

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drawn as they do after taking an opium derivative. They may become so habituated that the sleep inducing effect is greatly lessened, but otherwise sudden stoppage of a barbiturate causes no symptoms.

Barbital was introduced into medicine in 1903 and many derivatives of it are on the market. The original diethyl malonyl urea leaves the body largely through the kidneys, and in nephropathic subjects its action is greatly prolonged, as they are unable to excrete it. According to Georgetown workers,[3] it does not seem to be otherwise harmful to these patients. However, it is suggested that for nephritic subjects, a compound be selected which is destroyed in the body rather than excreted in the urine. Most of the barbiturates except barbital and soluble barbital are of the former type.—*Southern Medical Journal.*

1. Furth, Otton; and Scholl, Rudolf: Absorption of Ferrous and Ferric Compounds from the Intestine of Rabbits. Jour. Pharmac. & Exper. Ther., **58**:14 (Sept.) 1936.

1. Prinzmetal, Myron: Studies of the Mechanism of Circulatory Insufficiency in Raynaud's Disease in Association with Sclerodactylia. Arch. Int. Med., **58**:309 (Aug.) 1936.
2. Stanton, E. J.: Addiction and Tolerance to Barbiturates: The Effects of Daily Administration and Abrupt Withdrawal of Phenobarbital Sodium and Pentobarbital Sodium in the Albino Rat. Jour. Pharmac. & Exper. Ther., **57**:245 (July) 1936.
3. Argy, W. P.; Linegar, R. C.; and Dille, J. M.: Studies on Barbiturates. XV. Excretion of Barbital in Normal and Nephropathic Subjects. Ibid p. 258.

WOMAN'S AUXILIARY

CABELL COUNTY

The Cabell County Auxiliary met on November 9, at the home of Mrs. James S. Klumpp with Mrs. G. A. Ratcliff assisting hostess. Mrs. W. O. Grimm, president, called the meeting to order.

Dr. J. J. Brandabur read a most interesting paper to the Auxiliary on "Health Education and Communicable Diseases."

During the business session dues for the coming year were collected and new *Hygeia* subscriptions were written by Mrs. C .O. Reynolds, *Hygeia* chairman.

The meeting adjourned at 3:45 o'clock p. m. for an enjoyable social hour with the hostess.

MRS. EDWIN J. HUMPHREY, JR., *Secretary*.

FAYETTE COUNTY

The Fayette Auxiliary met on November 19, for luncheon at the Methodist Church, Montgomery. Mrs. F. S. Harkleroad of Harvey, W. Va., presided. Thirteen members were present.

Mrs. E. B. Thompson of Montgomery was the speaker for the occasion. Her subject was "And the Deaf Shall Speak." This was followed by a roundtable discussion of the aims and duties of the Auxiliary.

The December meeting of the Auxiliary will be held on the tenth at the home of Mrs. F. S. Harkleroad at Harvey. The meeting will be in the form of a tea and will be entirely devoted to a social hour.

MRS. G. G. HODGES, *Secretary*.

KANAWHA COUNTY

The Kanawha Medical Society Auxiliary met on October 10, at the East Side Woman's Club. Mrs. Robert Priced was the presiding officer. Forty-eight members attended the meeting.

Mrs. Robert Fitzgerald and Mrs. A. H. Stevens were two prominent guests of the meeting. Mrs. Fitzgerald is the National Auxiliary President and Mrs. A. H. Stevens is President of the State Auxiliary. Both officers addressed the Auxiliary in a particularly interesting and impressive manner. Much of importance was gleaned from their addresses.

Members of the Executive Board were entertained at this meeting and made various short addresses to the local Auxiliary.

This was a particularly successful meeting, members attending in large numbers to hear and become acquainted with the National President and the State officers.

MRS. CLAUDE SMITH, *Secretary*.

LOGAN COUNTY

The Woman's Auxiliary to the Logan County Medical Society met on October 9, at the home of Mrs. W. T. McClellan in Logan. Mrs. J. L. Patterson presided at the meeting. Seventeen members were present. Mrs. A. H. Stevens, State President, spoke to the group on the chief functions of the Auxiliary. Mrs. H. V. Thomas of Fairmont, state program chairman, spoke briefly to the Auxiliary.

During the business session the Auxiliary voted to continue the practice of saving a penny a day for the tuberculosis fund. It was also moved and carried to meet monthly at the homes of the various members instead of the customary luncheon meeting at some hotel or public building. Money saved this way will be added to the treasury for other purposes.

Members of the Logan Auxiliary were delighted with Mrs. Stevens' talk to them and particularly enjoyed the visits of both guests.

The November meeting will be held at the home of Mrs. C. A. Martin.

The Logan Auxiliary met on November 11, at the home of Mrs. C. G. Martin at Amherstdale, W. Va. Mrs. J. L. Patterson presided. There were twelve members and two guests present.

Dr. C. A. Davis addressed the Auxiliary and chose for his subject "Conservation of Vision." Mrs. J. W. Carney reviewed the article, "It Shouldn't Have Happened" from the last issue of *Hygeia*.

During the business session the Auxiliary passed a motion to the effect that each member of the Auxiliary would be taxed the luncheon fee for each meeting whether present or not. This tax will be put in the treasury.

The December meeting of the Auxiliary will be held on the first at the home of Mrs. W. F. Farley. This meeting will be of a social nature and all doctor's wives eligible for membership in the Auxiliary will be invited to attend.

MRS. W. E. BREWER, *Secretary*.

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The West Virginia Medical Journal

Published by
The West Virginia
State Medical Association

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A Prosperous New Year

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